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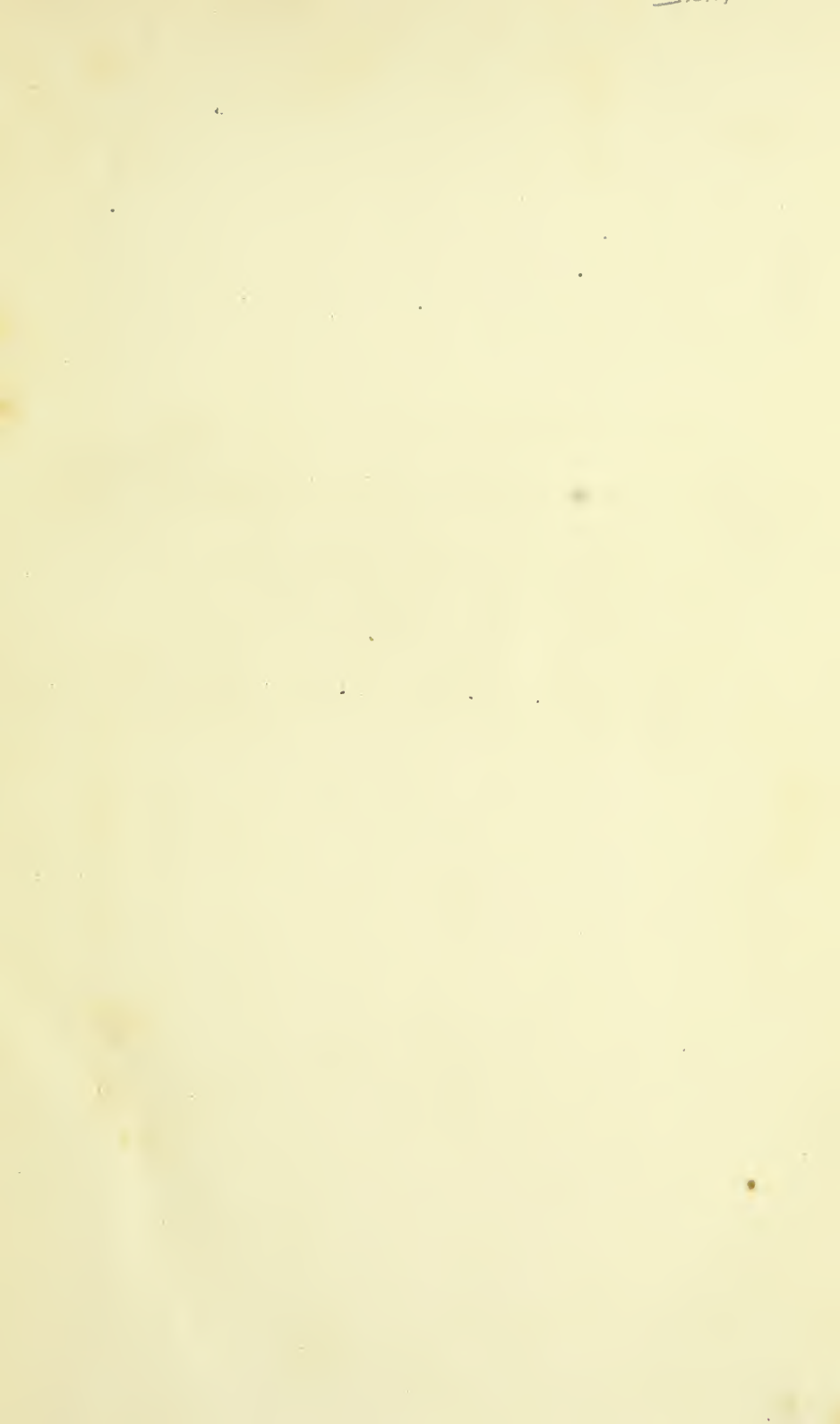
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REPORT

OF THE

COMMISSIONER OF GENERAL LAND OFFICE

TO THE

SECRETARY OF THE INTERIOR

FOR

THE YEAR 1871.



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# REPORT

## OF THE

### COMMISSIONER OF THE GENERAL LAND OFFICE.

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DEPARTMENT OF THE INTERIOR,  
*General Land Office, November 1, 1871.*

SIR: In compliance with a resolution adopted by the Senate of the United States, February 28, 1855, I have the honor to present the following as an abstract of the accompanying annual report for the fiscal year ending June 30, 1871, viz:

	Acres.
Disposal of public lands by ordinary cash sales.....	1, 389, 982. 37
Military, bounty-land warrant locations, under acts of 1847, 1850, 1852, and 1855.....	525, 920. 00
Homestead entries under act of 1862 and amendments .....	4, 600, 326. 23
Agricultural college scrip locations.....	494, 446. 93
Certified to railroads .....	2, 911, 938. 36
Certified for wagon-roads.....	397, 981. 44
Lands approved to States as swamp, and selected as indemnity for those covered by adverse rights.....	428, 597. 01
Chippewa and Sioux Indian scrip locations.....	16, 513. 00
Total.....	10, 765, 705. 39
Sales of previous year.....	8, 095, 413. 00
Increased disposal.....	2, 670, 292. 39
Cash receipts under various heads.....	\$2, 929, 284 70
	Acres.
Total area of the land States and Territories .....	1, 834, 998, 400
Surveyed within the last fiscal year.....	22, 016, 608
Which, with the 528,862,461 acres already surveyed, amounts to.....	550, 879, 069
Leaving yet to be surveyed.....	1, 284, 119, 331

*List of papers constituting annual report of the Commissioner of the General Land Office.*

1. Surveys of public lands, showing progress made during the past fiscal year, and giving list of United States surveyors and districts under their immediate superintendence; also, list of the different district land offices.

2. Synopsis of the surveying service in the different surveying districts.

3. Survey of morass lands along Little Calumet River.

4. Survey of confirmed private land claims in Colorado.

5. Survey of Indian reservations, comprising the Ponca reserve, Nez Percé, White Earth Indian reservation, Osage diminished reservation

in Kansas, Indian reservation in Oregon, Chickasaw, Cherokee, Creek, and Seminole lands, Indian Territory.

6. Survey of the eastern boundary of Nevada, northern boundary of Utah, and recommendations that measures be taken to properly define the following boundaries: Western and southern boundary of Wyoming, western boundary of Kansas, part of southern boundary of Colorado, part of eastern boundary of New Mexico, northern boundary of Nevada, eastern boundary of California, boundary between Georgia and Florida.

7. Indian lands.

8. Indian reserve lands.

9. Osage Indian trust and diminished reserve.

10. Useless military reservations.

11. Of pre-emption and proposed additional legislation in regard to the same, by which existing laws may be repealed and the settlement right extended to homestead claimants, thus uniting in one statute the principal features of both laws.

12. Of homesteads and proposed amendments to homestead laws, recommending that the law be so extended as to provide: 1. That wives who have been abandoned by their husbands may perfect homestead claims and avail themselves of the term of settlement made by the husband; 2. That agricultural college scrip be received in commutation of homestead entries; 3. That the term of service rendered by soldiers in the war of the rebellion be deducted from the five years' settlement and cultivation required by law.

13. Graduated lands; further legislation recommended, by which suspended cases may be disposed of.

14. Town sites.

15. Educational land bounty.

16. Emigration.

17. Railroads.

18. Chippewa Indian scrip.

19. Sixteenth and thirty-sixth sections in Indian reservations.

20. Swamp lands.

21. Spanish and Mexican titles, opinions, and decisions; abstract of New Idria mining case. Recommends legislation to provide for the more speedy adjustment of private land claims.

22. Mining statutes of July 26, 1866, and July 7, 1870. Operations and rulings under the same, and recommendation that the law of 1866 be so amended as to require definite surveys of claims prior to publication of notice, and a specific time within which to file adverse claims.

23. Instructions relative to the assignment of land warrants.

24. Suggestions as to a reorganization of the clerical force of the office and increased compensation to the heads of divisions; also as to the appointment of special agents to visit and supervise local land offices.

25. Reports of surveyors general, numbered from A to Q.

26. Tabular statements accompanying Commissioner's annual report, viz:

No. 1. Tabular statement showing the number of acres of public lands surveyed in the States and Territories up to June 30, 1871; also the total area of the public domain remaining unsurveyed within the same.

No. 2. Statement of public lands sold; of cash and bounty-land scrip received therefor; number of acres entered under the homestead law of May 20, 1862; of commissions received under the sixth section of said act; also land located with scrip under the agricultural college and mechanic act of July 2, 1862, and commissions received by registers and receivers on the value thereof; and statement of incidental expenses



thereon in the first half of the fiscal year commencing July 1, 1870, and ending June 30, 1871.

No. 3. Statement showing like particulars for the second half of the fiscal year ending June 30, 1871.

No. 4. Summary for the fiscal year ending June 30, 1871, showing the number of acres disposed of for cash; with bounty-land scrip; by entry under the homestead laws of May 20, 1862, and June 21, 1866, with aggregate \$10 homestead payments; homestead commissions; also locations with agricultural college and mechanic scrip, under act of July 2, 1862.

No. 5. Statement showing the quantity of swamp lands selected for the several States under acts of Congress approved March 2, 1849, September 28, 1850, and March 12, 1860, up to September 30, 1871.

No. 6. Statement exhibiting the quantity of swamp land approved to the several States under acts named in table No. 5, up to September 30, 1871.

No. 7. Statement exhibiting the quantity of swamp land patented to the several States under acts approved September 28, 1850, and March 12, 1860; also the quantity certified to the State of Louisiana under act approved March 2, 1849.

No. 8. Statement showing the State selections under the internal-improvement grant of September 4, 1841, on the 30th June, 1871.

No. 9. Exhibit of bounty-land business under acts of 1847, 1850, 1852, and 1855, showing the issue and locations from the commencement of operations under said acts to June 30, 1871.

No. 10. Statement showing the selections made by certain States of lands within their own limits, under agricultural and mechanic act of July 2, 1862, and its supplemental acts of April 14, 1864, and July 23, 1866; also the locations made with scrip under said acts.

No. 11. Statement exhibiting land concessions by acts of Congress to States, for canal purposes, from the year 1827 to June 30, 1871.

No. 12. Statement exhibiting land concessions by acts of Congress to States and corporations for railroad and military wagon-road purposes, from the year 1850 to June 30, 1871.

No. 13. Estimate of appropriations required for the office of the Commissioner of the General Land Office for the fiscal year ending June 30, 1873.

No. 14. Estimates of appropriations required to meet expenses of collecting the revenue from sales of public lands in the several States and Territories for the fiscal year ending June 30, 1873.

No. 15. Estimates of appropriations for the surveying department for the fiscal year ending June 30, 1873.

No. 16. Estimates of appropriations required for surveying the public lands for the fiscal year ending June 30, 1873.

No. 17. Statement of confirmed Indian pueblo grants and private land claims in New Mexico.

No. 18. General tabular statement exhibiting the following: 1. States and Territories containing public land; 2. Areas of States and Territories containing public lands, in square miles and acres; 3. Quantity sold; 4. Entered under the homestead laws; 5. Granted for military services; 6. Granted for agricultural colleges; 7. Approved under grants in aid of railroads; 8. Approved swamp selections; 9. Quantity granted for internal improvements; 10. Donations and grants for schools and universities; 11. Locations with Indian scrip; 12. Locations with float scrip, under act of March 17, 1862; 13. Estimated quantity granted to wagon roads; 14. Quantity granted to ship canals; 15. Salaries; 16.

Seats of government and public buildings; 17. Granted to individuals and companies; 18. Granted for deaf and dumb asylums; 19. Reserved for benefit of Indians; 20. Reserved for companies, individuals, and corporations; 21. Confirmed private land claims; 22. Quantity remaining unsold and unappropriated June 30, 1871.

27. Connected map of the United States, from ocean to ocean, exhibiting the extent of surveys, land districts, seats of surveyors general's offices, and district offices, also localities of railroads of general interest, and of mineral deposits, this being the map, the plate of which is especially referred to in joint resolution No. 2, approved January 26, 1863, 12 U. S. Stats., p. 822.

During the past fiscal year, the returns received in this office from the different district land offices show a total of 102,983 entries of all classes, and there have been examined and entered upon the tract books 101,410 entries, and 25,345 have been approved and passed for patents. There have also been received and registered 47,917 letters, and 37,834 have been written and recorded. Upon assuming control of this office in the month of February last, I found nearly every branch of the business greatly in arrears. As almost if not quite the entire clerical force of the office is requisite and necessary to the prompt and proper execution of current work, the task of bringing up the business thus found in arrears has been a difficult one. Such progress has been made, however, as to justify the belief that this work may be accomplished in time, with the force at present employed, but I am fully satisfied that it would be to the interest of both the Government and parties having business with this office, for Congress to provide for a temporary increase of the clerical force, as with such increase a large amount of business which has been in arrears for months and years could be brought up immediately, and a great saving of time to the Government and of expense to parties effected thereby.

Respectfully submitted.

WILLIS DRUMMOND,  
*Commissioner.*

The Honorable SECRETARY OF THE INTERIOR.

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DEPARTMENT OF THE INTERIOR,  
GENERAL LAND OFFICE,  
November 1, 1871.

SIR: The operations of this branch of the public service for the past fiscal year have been as follows, to wit:

# 1.—SURVEYS OF PUBLIC LANDS.

Surveys of public lands have been prosecuted in the several surveying districts, seventeen in number, by deputy surveyors, under the immediate superintendence of United States surveyors general, appointed for the following States and Territories:

*District of Kansas.*—Lawrence, Kansas, C. H. Babcock.

*District of Minnesota.*—St. Paul, Minnesota, C. T. Brown.

*District of Dakota.*—Yancton, Dakota, W. H. H. Beadle.

*District of Colorado.*—Denver City, Colorado Territory, W. H. Lessig.

*District of Idaho.*—Boise City, Idaho, L. F. Cartée.

*District of California.*—San Francisco, California, J. R. Hardenbergh.

*District of Nevada.*—Carson City, Nevada, E. S. Davis.

*District of New Mexico.*—Santa Fé, New Mexico, T. Rush Spencer.

*District of Oregon.*—Eugene City, Oregon, Wm. H. Odell.

*District of Washington Territory.*—Olympia, Washington Territory, E. P. Ferry.

*District of Nebraska.*—Plattsmouth, Nebraska, E. E. Cunningham.

*District of Montana.*—Helena, Montana, John E. Blaine.

*District of Utah.*—Salt Lake City, C. C. Clements.

*District of Arizona.*—Tucson, Arizona, John Wasson.

*District of Florida.*—Tallahassee, Florida, M. L. Stearns.

*District of Louisiana.*—New Orleans, Louisiana, E. W. Foster.

*District of Wyoming.*—Cheyenne, Wyoming, Silas Reed.

There are eighty-two land districts in the land States and Territories, for the accommodation of the people who desire to purchase and obtain title to public lands, two of which were established by acts of Congress within the last fiscal year—one at Susanville, California, and the other at Walla-Walla, Washington Territory.

The following is a correct list of—

## UNITED STATES LAND OFFICES.

<i>Ohio.</i>	<i>Arkansas—Continued.</i>	<i>California—Continued.</i>
Chillicothe.	Camden.	Susanville.
<i>Indiana.</i>	Harrison.	Stockton.
	Dardanelle.	Los Angeles.
Indianapolis.	<i>Florida.</i>	Visalia.
<i>Illinois.</i>		Shasta.
	Tallahassee.	<i>Nevada.</i>
Springfield.	<i>Iowa.</i>	
<i>Missouri.</i>		Carson City.
	Fort Des Moines.	Austin.
Boonville.	Council Bluffs.	Belmont.
Ironton.	Fort Dodge.	Aurora.
Springfield.	Sioux City.	<i>Minnesota.</i>
<i>Alabama.</i>	<i>Montana Territory.</i>	
	Helena.	Taylor's Falls.
Huntsville.	<i>Arizona Territory.</i>	St. Cloud.
Montgomery.		Alexandria.
Mobile.	Prescott.	Jackson.
<i>Mississippi.</i>	<i>Utah Territory.</i>	New Ulm.
		Litchfield.
Jackson.		Du Luth.
<i>Louisiana.</i>	Salt Lake City.	<i>Oregon.</i>
	<i>Wisconsin.</i>	
New Orleans.	Menasha.	Oregon City.
Natchitoches.	Falls of St. Croix.	Roseburg.
<i>Michigan.</i>	Stevens Point.	Le Grand.
	La Crosse.	<i>Kansas.</i>
Detroit.	Bayfield.	
East Saginaw.	Eau Claire.	Topeka.
Ionia.	<i>California.</i>	Salina.
Marquette.		Independence.
Traverse City.		Concordia.
<i>Arkansas.</i>	San Francisco.	Augusta.
	Sacramento.	<i>Washington Territory.</i>
Little Rock.	Marysville.	
	Humboldt.	Olympia.
		Vancouver.
		Walla-Walla.



*United States Land Offices.—Continued.*

<i>Nebraska.</i>	<i>Dakota Territory.</i>	<i>Idaho Territory.</i>
West Point.	Springfield.	Boise City.
Beatrice.	Vermillion.	Lewiston.
Lincoln.	Pembina.	
Dakota City.	<i>Colorado Territory.</i>	
Grand Island.	Pueblo.	<i>Wyoming Territory.</i>
<i>New Mexico Territory.</i>	Central City.	
	Denver City.	
Santa Fé.	Fair Play.	Cheyenne.

The total area of the land States and Territories is 1,834,998,400 acres. Of this amount there have been surveyed within the fiscal year ending June 30, 1871, 22,016,608 acres, which, with the 528,862,461 acres surveyed up to the beginning of the said fiscal year, amount to 550,879,069 acres; leaving yet to be surveyed, 1,284,119,331 acres.

For further detailed information, I beg leave to refer to tabular statement No. 1, accompanying this report.

## 2.—SYNOPSIS OF THE SURVEYING SERVICE IN THE SEVENTEEN SURVEYING DISTRICTS.

*Florida.*—The act of July 15, 1870, provided the sum of \$10,000 for continuing the extension of the public surveys in this State during the year ending the 30th June last. Under said appropriation the surveyor general entered into three surveying contracts, creating in the aggregate an estimated liability of \$9,880.

The area over which the subdivisinal surveys were extended during the year, as returned to this office, is 427,819 acres, making the aggregate of surveyed lands at the close of the year 27,531,587 acres, leaving unsurveyed in this State an estimated area of 10,399,933 acres.

It is proposed during the next fiscal year to extend the standard township and subdivisinal surveys in the vicinity of Lake Okeechobee and along the Caloosahatchee River, and for this purpose an estimate of \$21,000 is submitted.

*Louisiana.*—The sum of \$10,000 was appropriated for surveys in this State during the past fiscal year. Of this amount the sum of \$2,000 was applied to the survey of the public lands generally, and the remainder to the survey of the public lands and private claims in the township in which the city of New Orleans is situated. In addition to the amount set apart for the survey of the New Orleans township, out of the appropriation made by Congress, the city authorities appropriated \$3,000, and placed the same under the control of the United States surveyor general, in order to hasten this long-deferred survey.

For continuing the subdivisinal surveys in the southwestern and northwestern districts in Louisiana during the fiscal year ending June 30, 1873, an estimate of \$21,240 is submitted.

*Minnesota.*—The regular appropriation for continuing the public surveys in this State during the year ending June 30, 1871, was \$40,000. Under this appropriation eight surveying contracts were entered into by the surveyor general, absorbing the entire amount. In addition to the regular appropriation, Congress provided the sum of \$95,980 for surveys along the line of the Northern Pacific Railroad; \$5,000 of which was set aside by the act for clerk-hire in the office of the surveyor general, leaving \$90,980 available for surveys in the field. Under the latter appropriation, the surveyor general has entered into twenty-one contracts, the estimated liabilities of which amount in the aggregate to \$88,768 50. During the past year the public lines have

been extended over an area of 3,209,686 acres, making the aggregate area surveyed in this State up to June 30, 1871, 29,327,305 acres, and leaving unsurveyed an estimated area of 24,132,535 acres.

To fulfill the obligations under the several acts of Congress granting lands to aid in the construction of railroads, and to meet the requirements of actual settlers upon the public domain, an estimate of \$75,000 for surveys in Minnesota during the next fiscal year is submitted.

*Dakota.*—The act of Congress of July 15, 1870, appropriated \$20,000 for surveying the public lands in Dakota during the last fiscal year, and provided that one-half of that amount should be expended in the Pembina land district. Contracts to the entire amount were entered into by the surveyor general, in accordance with the terms of the act making the appropriation, and the particular localities selected as the sphere of surveying operations were those toward which immigration was rapidly tending, or where the surveys were most required by actual settlers. During the past fiscal year the subdivisinal surveys were extended over 533,163 acres, making a total of 6,577,427 acres surveyed up to 30th June, 1871, and leaving 90,018,413 acres yet to be surveyed.

To meet the demands of the settlers in the southern portion of the Territory, and in the valley of the Red River of the North, and to facilitate the selection of lands granted to the Northern Pacific Railroad, the construction of which is now rapidly progressing, an estimate of sixty thousand dollars (\$60,000) for continuing the public surveys in Dakota during the next fiscal year is submitted, and the appropriation of that amount respectfully recommended.

*Nebraska.*—The sum of \$40,000 was appropriated for surveys in this State during the fiscal year ending June 30, 1871. Under this appropriation nine surveying contracts were entered into by the surveyor general, covering the entire amount appropriated, a large portion of which was applied to the extension of the surveys along the line of the Union Pacific Railroad, in the western part of the State. During the year the subdivisinal surveys were extended over an area of 2,221,623 acres. The aggregate area surveyed up to June 30, 1871, was 21,571,130 acres, and the area remaining unsurveyed at that date estimated at 27,065,670 acres. To accommodate the large number of settlers upon the unsurveyed lands, and to meet the obligations under the grant to the Union Pacific Railroad, which has been in operation for several years, an estimate of \$60,000 for surveys in Nebraska during the next fiscal year is submitted.

*Kansas.*—The sum of forty thousand dollars (\$40,000) was appropriated for surveying the public lands in Kansas during the past fiscal year, and the whole amount was expended in the western and southern portions of the State. The area covered by the subdivisinal surveys, made during the year, is 7,003,411 acres, of which 4,792,790 acres are within the Osage diminished reservation, authorized to be surveyed by section 12 of the act of Congress approved July 15, 1870. (Statutes, vol. 16, p. 362.) The total area surveyed in the State up to June last was 36,173,074 acres, leaving unsurveyed at that date an estimated area of 15,870,446 acres.

To meet the obligations under the various acts of Congress granting lands to aid in the construction of railroads, and the demands of actual settlers, who are moving into Kansas in great numbers, an increased appropriation for surveys during the next fiscal year will be needed, and an estimate of \$70,000 is therefore submitted.

*Montana.*—In this Territory the public surveys have been prosecuted to the full extent of the appropriation.

The surveyor general reports that the standard lines have been extended into the Beaverhead, Rattlesnake, Boulder, Bitter Root, and Smith River Valleys, rendering it practicable to subdivide the lands in the valleys as rapidly as the advancing settlements may require. In addition to this, forty-six townships have been surveyed and subdivided, and returns thereof made to this office, and plats and descriptive lists filed in the local land office at Helena. The aggregate area covered by the subdivisional surveys of the past year, as returned to this office, is 873,622.65 acres. The surveys in Montana, owing to the abrupt and mountainous character of a great portion of that Territory, are, to a considerable extent, disconnected, and have been restricted mainly to those detached bodies of lands available for actual settlement, but great care has, at the same time, been taken to make the projection as regular as practicable.

The surveyor general reports that there have been seven applications for mining surveys during the past year.

It is proposed during the next fiscal year to extend subdivisional surveys within the limits of the Judith Basin and the valley of the Yellowstone on the east; along the Sun and Teton Rivers on the north; over Horse and Thompson's Prairies on the west, and over a number of fractional townships on the south.

The construction of the Northern Pacific Railroad through Montana will open up many extensive valleys and plains heretofore inaccessible to the immigrant, and a rapid increase of the population of the Territory will be the result, rendering an increased appropriation necessary, in order that the public surveys may keep pace with the advancing settlements, and that the selection of lands granted by Congress to aid in the construction of the railroad may be facilitated. This office, concurring in the recommendation of the surveyor general, that an increased appropriation may be made for surveys in Montana during the next fiscal year, submits an estimate of \$50,000 for that purpose.

*Wyoming.*—The sum of \$40,000 was appropriated for surveys within the limits of the grant to the Union Pacific Railroad during the year. Twelve surveying contracts were entered into under this appropriation, creating in the aggregate an estimated liability of \$39,725. The subdivisional surveys made during the year, as returned to this office, embrace an area of 770,167 acres. There remains unsurveyed in this Territory an estimated area of 61,874,953 acres.

An estimate of \$50,000 is submitted for continuing the public surveys in Wyoming during the next fiscal year, which amount it is proposed to apply to the extension of the lines over the agricultural, mineral, and grazing lands, and within the limits of the grant to the Union Pacific Railroad, in order that the selection of the lands granted to the railroad may be facilitated.

*Colorado.*—The act of July 15, 1870, appropriated the sum of \$40,000 for the extension of the public surveys in the Territory of Colorado during the past fiscal year, and the further sum of \$10,000 for the survey of public lands within the limits of the land grant to the Union Pacific Railroad. Under the regular appropriation, the surveyor general entered into ten surveying contracts, which have been completed, and returns made to this office. The aggregate liability under these contracts was \$39,928 10, leaving but \$71 90 of the appropriation unexpended. Under the appropriation for the survey of railroad lands, two contracts were entered into, amounting to \$9,612 85. The act of Congress approved July 1, 1870, entitled "An act to confirm the title of the heirs of Gervacio Nolan, deceased, to certain lands in the Territory



of Colorado," required the extension of the public lines over said lands, and accordingly four surveying contracts were made for that purpose, amounting to \$9,500. The area over which the subdivisinal surveys were extended during the year, as returned to this office, is 1,276,572 acres, making the aggregate area surveyed in the Territory, up to 30th June, 1871, equal to 8,902,899 acres, and leaving unsurveyed an area estimated at 57,977,101 acres.

An estimate of \$50,000 is submitted for surveys during the next fiscal year in this Territory, along the lines of the several land-grant railroads and in the mineral districts; also in such other localities as may be required for the accommodation of actual settlers.

*New Mexico.*—The sum of \$10,000 was appropriated for surveys in this Territory during the fiscal year ending June 30, 1871, and the entire amount was covered in two contracts for the survey of those lands for which there was the greatest demand by actual settlers. According to the returns made to this office, the subdivisinal surveys were extended during the year over an area of 161,414 acres. The total number of acres surveyed in the Territory, up to June 30, 1871, was 4,402,273 acres, and there remained unsurveyed at that date an estimated area of 73,166,367 acres.

In order to provide during the next fiscal year for the extension of the public surveys east of the Rio Grande del Norte, along the projected railroad route, near the thirty-second parallel of north latitude, and in the mineral region of the Territory, to enable the miners to have their claims surveyed and connected with the public surveys, an estimate of \$40,000 is respectfully submitted.

*Idaho.*—The sum of \$20,000 was appropriated for surveying purposes in Idaho Territory. Six contracts were entered into by the surveyor general, consuming in the aggregate the entire appropriation. The surveys have been extended over that part of the Territory where the interests of the people most demand them, and where immigration was most rapidly tending. Of the surveys in this Territory, 130,129 acres were Nez Percé Indian lands, surveyed into twenty-acre tracts, in conformity to article 3, treaty of June 9, 1863.

During the last fiscal year subdivisinal surveys have been made over an area of 491,324 acres. The aggregate area surveyed up to 30th June, 1871, was 1,524,055 acres, and the remaining unsurveyed at that date was estimated at 53,704,105 acres.

*Utah.*—The sum of \$20,000 was appropriated for the survey of public lands in Utah. An additional appropriation of \$10,000 was also made for the survey of public lands within the limits of the land grant of the Union Pacific Railroad Company.

Seven contracts were entered into under the general appropriation of \$20,000, reaching, in the aggregate, \$18,250, and three contracts under the special appropriation, amounting to \$9,000. The subdivisinal surveys within the fiscal year extend over an area of 551,438.42 acres, and the total of surveys up to June 30, 1871, includes 3,762,946 acres, leaving unsurveyed 50,302,129 acres.

The surveyor general was notified by this office that an appropriation had been made for the eastern boundary of Nevada, which forms the western boundary of Utah, and that the work would be done under the supervision of the surveyor general of Nevada; and was instructed, in consideration of this fact, in surveying the extreme western portion of Utah, not to extend the lines of public surveys beyond the 114th meridian west from Greenwich.

*Nevada.*—The appropriation for this State was \$47,000. The act pro-

vided that \$17,000 (including the sum of \$10,625, appropriated by act of July 20, 1868) might be used for the survey of the eastern boundary line of the State, thereby setting aside \$6,375 out of the appropriation of \$17,000 for the survey of the boundary line, and leaving the sum of \$10,625 for the survey of public lands.

The said boundary line has been astronomically determined and established, and the residue of the appropriation, \$40,625, exhausted in eight contracts for the survey of public lands.

There were surveyed during the past fiscal year 1,054,556.50 acres, and the entire number of acres surveyed up to June 30, 1871, amount to 4,876,447, leaving 66,861,294 acres yet to be surveyed.

*Arizona.*—The appropriation by Congress for surveys in this Territory, per act of July 15, 1870, was \$10,000.

Five contracts were entered into, embracing in the aggregate the entire appropriation.

The subdivisinal surveys during the past fiscal year extend over an area of 189,559.62 acres. The aggregate area surveyed up to June 30, 1871, was 1,951,343 acres, leaving yet to be surveyed an estimated area of 70,954,961 acres.

*California.*—By the act of July 15, 1870, the sum of \$50,000 was appropriated for the survey of public lands in this State.

Thirty-five contracts were made by the surveyor general, absorbing the entire appropriation. In addition to this there were eighteen contracts entered into under the provisions of the act approved May 30, 1862, authorizing the survey of public lands at the expense of applicants. During the past fiscal year the subdivisinal surveys in California were extended over an area of 818,846 acres, making the aggregate area surveyed up to the 30th June, 1871, 33,900,632 acres, and leaving unsurveyed at that date an estimated area of 87,047,208 acres.

During the ensuing fiscal year it is proposed to extend the public lines over the finally confirmed private claims where no request for a survey was made within ten months from July 23, 1866, and any final confirmation thereafter made, as provided by section 8 of the act of that date, entitled "An act to quiet land titles in the State of California;" also to extend the lines over the mineral portions of the State and within the limits of the grants to the several railroads, some of which have already been completed and are awaiting surveys in order to enable the companies to select the granted sections; and for these purposes an estimate of \$70,000 is submitted.

*Oregon.*—The act making appropriations for the surveying service for the past fiscal year provided the sum of \$40,000 for the survey of the public lands in Oregon. Ten surveying contracts were entered into by the surveyor general, covering an estimated liability of \$39,968 10, four of which were let at the enhanced rates authorized by the act for the survey of lands covered by dense forests or thick undergrowth. According to the returns made to this office, there were surveyed in this State, during the year, 677,023 acres, making an aggregate area of 10,140,281 acres surveyed up to June 30, 1871, and leaving unsurveyed at that date 50,835,079 acres. It is proposed to extend the public surveys during the next fiscal year along the Columbia River, within the limits of the grant to the Northern Pacific Railroad, and within the limits of grants to other railroads and wagon-roads; also in regions already settled by pre-emptors awaiting the surveys to enable them to file proofs of their settlement in the local land offices; and for these purposes an estimate of \$70,000 is respectfully submitted.

*Washington Territory.*—The act of Congress approved July 15, 1870,

appropriated \$20,000 for surveys in Washington Territory. Nine contracts were entered into, absorbing the entire appropriation.

The act provides for the survey of regions in the Territory covered by dense forests or thick undergrowth, at augmented rates. But one contract of this character was entered into, and before it was approved by this office the surveyor general was required to furnish all the facts showing the necessity for such survey, and the precise character of the country to be surveyed.

The claims of the Puget Sound Agricultural Company having been adjudicated by the international commission to settle the claims of the Puget Sound and Hudson Bay Companies, arising under the 3d and 4th articles of the treaty of 1846 with Great Britain, the lands embraced in said claims became a part of the public domain, and the public surveys have been extended over a very considerable portion of them.

The number of acres surveyed within the fiscal year was 405,459.82 acres, and up to June 30, 1871, altogether 5,773,719 acres, leaving 39,022,441 acres yet unsurveyed.

### 3.—SURVEY OF MORASS LANDS ALONG LITTLE CALUMET RIVER.

Application was made in August, 1871, for the survey of the morass lands situated along the Little Calumet River, in township 36 north, range 8 west of the 2d principal meridian, Indiana, under the provisions of an act of Congress approved July 1, 1870, entitled "An act in relation to certain unsold lands in the counties of Porter and Lake, in the State of Indiana," (United States Statutes, vol. 16, p. 187.) There being no appropriation for the survey of public lands in the State of Indiana, a deposit of three hundred and fifty dollars (\$350) with the Assistant Treasurer of the United States was made to defray the cost of survey, and a contract was entered into for that amount on the 21st day of August, 1871.

The necessary instructions were issued, and the work is now in progress.

### 4.—SURVEYS OF CONFIRMED PRIVATE LAND CLAIMS IN COLORADO.

The claim of Cornelio Vigil and Ceran St. Vrain, formerly situated in New Mexico, but now in the Territory of Colorado, was confirmed by Congress June 21, 1860, to the extent of eleven square leagues to each of them.

Said claim, as granted by Amijo, the governor of New Mexico, and as described in the order to give juridical possession to the justice of the peace, embraced several millions of acres. The grantees had disposed of numerous tracts of their grant prior to the confirmation by Congress, and greatly in excess of the quantity confirmed, and failed to have their claim surveyed as the law required. As early as May 2, 1867, Colonel W. Craig, one of the derivative claimants under Vigil and St. Vrain, was notified by this office that in order to have the survey of the twenty-two square leagues (confirmed to the said Vigil and St. Vrain) executed, it was incumbent upon them to deposit a sufficient sum to defray the expense of such survey, to the credit of the United States Treasurer, in accordance with the act of Congress approved June 2, 1862, (vol. 12, p. 410,) requiring the cost of survey of private land claims to be paid by claimants. The parties failing to make the necessary deposit, no survey of the confirmed claim was made anterior to the passage of an amendatory act of Congress, approved February 25,



1869, authorizing the Commissioner of the General Land Office to cause the lines of the public surveys to be run in the regions where a proper location would place the said Vigil and St. Vrain claims. As these claims, as well as those of all actual settlers upon the tracts originally claimed by the grantees, holding possession under titles or promises to settle, which had been made by Vigil and St. Vrain, or their legal representatives, prior to the passage of the said act of February 25, 1869, were to be adjusted according to the lines of the public surveys, it became necessary to extend the same over the greater part of the original claim in order to embrace the possessory rights of the derivative claimants, scattered as they were over the vast extent of country embraced in the original claim. Apart from the grantees and the derivative claimants, who were entitled to locate their claims to the extent of the twenty-two (22) square leagues confirmed by Congress, the amendatory act of February 25, 1869, provided for the claims of all actual settlers falling within the located limits of the Vigil and St. Vrain claims, to the extent which would embrace their several settlements, when their claims were established, either as pre-emption or homestead, according to law; and for the aggregate of the areas of this class of claims, the grantees or their legal representatives were entitled to locate a like quantity of public lands, not mineral, and not to exceed one hundred and sixty (160) acres in one section.

The confirmatory act of Congress, approved June 21, 1860, provided that, in surveying the Vigil and St. Vrain claims, the survey should first be made of all tracts occupied by actual settlers "holding possession under titles or promises to settle" given by the grantees, in the tracts claimed by them; and after deducting the area embraced in the twenty-two square leagues, the remainder should be located in two equal tracts, each of square form, in any part of the original tract claimed by the said Vigil and St. Vrain, and wherever they might select.

Inasmuch as the area of the lands claimed by those who had purchased or settled under Vigil and St. Vrain had already been ascertained to reach three times the area confirmed to them, the original grantees made no selections, as contemplated by the act of Congress, within the limited time, and therefore forfeited their rights. In view of this fact, the register and receiver were instructed, March 11, 1870, to receive no applications by homestead claimants or pre-emptors for any land embraced within the original limits of the Vigil and St. Vrain grant, until the derivative claimants, protected by the provisions of the act of February 25, 1869, were first satisfied to the extent of the twenty-two square leagues as confirmed by Congress.

It was ascertained, as already stated, that the derivative claims exceeded, to a great extent, the area confirmed to Vigil and St. Vrain, and the local land officers were directed to adjudicate locations of derivative claimants in accordance with the seniority of their titles, to the extent of twenty-two square leagues or ninety-seven thousand six hundred and fifty one (97,651) acres. Owing to the fact that there were many derivative claims scattered over the vast extent of country embraced in the original grant, not located as required by the act of February 25, 1869, within one year from the date of its approval, nor proved up to the satisfaction of the register and receiver, as required by law, and as the reason assigned therefor by the claimants was want of notice of the requirements of the act, a joint resolution was passed by Congress April 28, 1870, extending the time for the presentation of this class of claims to one year from the completion and approval of the subdivisional surveys contemplated by the amendatory act of February

25, 1869. In pursuance of the provision of said joint resolution, additional instructions were issued to the surveyor general August 23, 1870, to give further notice to the claimants immediately upon the completion and approval of the surveys contemplated by the act of February, 1869, in order that they might select and locate their claims by legal subdivisions.

Since the passage of the joint resolution aforesaid, and the steps taken by this office to carry out the provisions of the law in relation to the survey and selection of the three several classes of claims under the provisions of the act of February, 1869, numerous applications have been presented by parties wishing to pre-empt or make homestead entries on lands falling within the original limits of the grant, but this office has held that, under the laws, it had no authority to order the lands into market until the derivative claimants were fully satisfied to the extent of their claims as confirmed by Congress.

#### 5.—SURVEY OF INDIAN RESERVATIONS.

*Ponca Reserve.*—Pursuant to an order of the honorable Secretary of the Interior, bearing date November 10, 1870, instructions were issued to the surveyor general of Dakota, December 1, 1870, to cause a survey into 80-acre tracts to be made of that portion of the Ponca Indian reservation, situated in Southeastern Dakota, lying between the bluffs and the Missouri River, and extending from the mouth of the Niobrara to the mouth of Ponca Creek.

The portion designated having at that time already been surveyed according to the usual rectangular system, it was simply necessary to have the required subdivisions marked in the field, and the surveyor general was so instructed under advice from the Indian Office. The survey was executed in July, 1871, and plats of portions of three townships, containing in the aggregate 7,198.12 acres, were returned to this office. The cost of survey was paid out of the special appropriation of \$444,480, provided in the act approved July 15, 1870, "for surveys of exterior boundaries of Indian reservations, and subdividing portions of the same," &c.

*Nez Percé Indian Reservation.*—Since the last annual report from this office, the survey, then in progress under the provisions of the first article of the treaty of August 13, 1868, of the Nez Percé Indian reservation, situated in Idaho Territory, has been completed. Plats and field-notes have been returned to this office, and duplicates of the same were transmitted to the Indian Office March 17, 1871. A total area of 746,605 acres was surveyed, at a cost of \$13,458 35, of which \$12,862 41 was paid out of the appropriation of June 30, 1861, (U. S. Stats., vol. 12, p. 58.)

The sum provided in this act was supposed to be sufficient to meet the expenses of the survey, but, as shown above, it fell short of the actual cost of the work \$595 94, which deficiency was paid out of the appropriation of July 15, 1870, relating to similar surveys. A portion of this reservation, embracing lands already improved to a considerable extent, and containing in the aggregate 130,128.97 acres, was subdivided into 20-acre tracts, under the provisions of the treaty referred to.

*White Earth Reservation in Minnesota.*—This reservation, as provided in the second article of the treaty with the Chippewas of the Mississippi, March 19, 1867, (U. S. Stats., vol. 16, p. 720,) was located in conformity with the sixth article of the same treaty, by commissioners appointed for that purpose, who reported to the Indian Office under date of De-

cember 23, 1867, the specific boundaries thereof, embracing thirty-six miles square. The Commissioner of Indian Affairs recommended to the Department the survey of the reservation, and by direction of the honorable Secretary this office instructed the surveyor general of Minnesota, October 4, 1870, to contract for the survey of so much of the reservation into 40-acre tracts as the Indian agent might direct, in localities to be designated by him, and to the extent in cost of survey of \$33,480, to be paid out of the appropriation provided for such surveys by act of July 15, 1870. This contract was approved May 13, 1871, but as yet no return has been made.

*Osage Diminished Reserve in Kansas.*—Under the provisions of the sixteenth article of the treaty with the Osage Indians, concluded September 29, 1865, (vol. 14, p. 690,) Congress, by act approved July 15, 1870, (vol. 16, p. 362,) authorized the survey of this diminished reserve in Kansas, in the same manner as other public lands are surveyed, with a proviso that the assent of the Osage tribe be first obtained. By the terms of the treaty this reservation is bounded on the north by the Osage lands ceded in trust to the United States; on the east by the Osage lands sold to the United States by the first article of said treaty; on the west by the one hundredth meridian of longitude west from Greenwich; and on the south by the former northern boundary of the Cherokee national lands.

The consent of the Indians to the survey of the reservation was obtained on the 22d October, and on the same day the surveyor general was telegraphed to close contracts for surveying the same. The work has been vigorously prosecuted, and returns of survey have been received to the extent of 4,792,789.73 acres. The total cost of the subdivisional surveys of the diminished reservation amounts to \$75,435 64, of which \$75,000 was paid out of the appropriation made by Congress of that amount by act approved March 3, 1871, (U. S. Stats., vol. 16, p. 502,) and the balance, \$435 64, is payable out of the appropriation of July 15, 1870, specifically providing for this and similar surveys. These sums are to be refunded to the Treasury from the proceeds of the sale of lands within the reservation.

*Reservations in Oregon.*—On the 16th of February, 1871, the Commissioner of Indian Affairs made a report to the Secretary of the Interior, recommending that certain Indian reservations in Oregon be surveyed. The recommendation was approved by the Secretary, and instructions were issued to this office to cause the said surveys to be executed to the extent proposed in the report.

In pursuance of said instructions, the surveyor general of Oregon was directed to contract for the survey of Umatilla, Klamath, Warm Springs, and Siletz Indian reservations, the expenses of the same, to the extent of \$13,000, to be paid out of the funds set apart by the appropriation act approved July 15, 1870, for surveying Indian reservations. These contracts amount in the aggregate to \$12,982, and the Commissioner of Indian Affairs was requested to instruct the agents of the several reservations named to furnish the surveyor general with the necessary instructions in regard to the localities, extent, and particular tracts to be surveyed.

Contract was also made for the survey of the Grand Ronde Indian reservation to the extent of \$4,000, in pursuance of the act of Congress approved March 3, 1871, (U. S. Stats., vol. 16, p. 567.) At the writing of this report no returns of these surveys have been made.

Under the provisions of "An act making appropriations for the current and contingent expenses of the Indian Department," &c., approved



March 3, 1871, an appropriation of \$20,000 was made "for surveying such reservations in Oregon, under treaty stipulations, as may be rendered necessary." (U. S. Stats., vol. 16, p. 569.) Instructions were issued to the surveyor general of Oregon, by direction of the Department, dated March 13, 1871, to have Indian reservations surveyed, after consultation with the superintendent of Indian affairs as to the location and extent thereof.

*Chickasaw lands in the Indian Territory.*—The act of Congress of April 8, 1864, authorizes the survey of Indian and other reservations, under the direction and control of the General Land Office, and in conformity to the rules and regulations under which other public lands are surveyed. In accordance with this statute a contract was entered into by this office for the survey of the Chickasaw lands in the Indian Territory into 160-acre tracts, as required by the eleventh article of treaty concluded with the Choctaws and Chickasaws, April 28, 1866. (U. S. Stats., vol. 14, p. 774.) These lands are bounded on the north by the Canadian River, on the east by the lands of the Choctaw Nation, on the south by the main Red River, and on the west by the leased Indian country. The surveyors were instructed to select a suitable initial point in the center of the Chickasaw lands, or in the vicinity of Fort Arbuckle, and perpetuate it by a suitable monument, and from this point to establish a principal meridian and base line, to be known by the designation of "the Indian Base Line and Meridian." The surveyors have returned subdivisional surveys of 65 townships, embracing in the aggregate about 1,350,107 acres, and are, at present, prosecuting with a large force the entire survey, with a view to its early completion.

*Cherokee, Creek, and Seminole lands.*—Contracts were also entered into, on the 3d of December, 1870, for the establishment and survey of the ninety-sixth meridian of longitude west from Greenwich, through the Cherokee lands in the Indian Territory; and to survey and subdivide that part of said lands which lies west of the said meridian, east of the ninety-eighth degree of longitude west, and south of the thirty-seventh parallel of north latitude, disposed of by the Cherokees to the United States by Article 16 of the treaty of July 19, 1866. Also for the survey and subdivision of that part of the west half of the entire Creek lands ceded to the United States by the third article of the treaty of June 14, 1866, which lies between the ninety-eighth degree of longitude west, and a line dividing the Creek lands into two equal parts, excepting therefrom that part which was granted by the United States to the Seminoles by the third article of the treaty of March 21, 1866. Also for the survey and subdivision of that part of the Seminole lands ceded by them to the United States by Article 3 of the treaty of March 21, 1866, which lies east of the ninety-eighth degree of longitude west, excepting the eastern part thereof, equal to a tract of thirty miles square, to be reserved for the Pottawatomies, in accordance with Article 1 of the treaty of February 27, 1867. Also to extend the Indian meridian from the Canadian River north to the thirty-seventh parallel of north latitude, and to establish the necessary standard lines through the said Cherokee, Creek, and Seminole lands. Under these contracts no returns have been received.

#### STATE AND TERRITORIAL BOUNDARIES.

1. *Eastern boundary of Nevada.*—By the act of Congress approved July 20, 1868, there was appropriated for the survey of the eastern boundary of Nevada the sum of \$10,625, which, upon representations of its insufficiency, was by act of July 15, 1870, increased to \$17,000, making the

maximum rate per mile \$40, instead of \$25 provided by the first appropriation. On August 16, 1870, the surveyor general of Nevada concluded a contract with J. E. James, an astronomer and surveyor, who soon after proceeded to the field of operations.

The intersection of the thirty-seventh degree of longitude west from Washington with the center line of the Central Pacific Railroad had been fixed upon as the initial point, because of the facilities it afforded for obtaining longitude by telegraphic communication with points the astronomical position of which had been clearly established.

In the work of properly locating the initial point, Mr. James was assisted by Mr. J. T. Gardner, and the latitude and longitude of Pilot Peak, situated about twenty-two miles south of the railroad, was determined geodetically by triangulations connected with the coast-survey station at Salt Lake City, modifying the resulting latitude by astronomical observations. The monument established on Pilot Peak was found to be in north latitude  $41^{\circ} 01' 10.7''$ , and longitude  $37^{\circ} 2' 7.4''$  west from Washington. Having measured from this point to a point on the thirty-seventh meridian, the astronomer proceeded north to the initial point, where observations were again taken for latitude. This point was commemorated by a granite shaft eight feet long with two feet of the upper portion dressed one foot square, with the top in the form of a pyramid. The undressed portion is about one foot six inches square. It is surrounded by a mound of boulders six feet in diameter at the base, built to the top of the undressed portion of the shaft. The west face is inscribed "Nevada," the east side "Utah," the north "L. W.  $37^{\circ}$ ," and the south "1870." This monument is situated one chain sixteen links south of the center line of the track of the Central Pacific Railroad. The boundary crosses the track about two and one-half miles easterly from Tecoma. From the initial point northerly the line for several miles passes through a barren country covered with sagebrush. From the seventh to the thirty-first mile, north, it proceeds along the western water-shed of Goose Creek, crossing its main branch between the twenty-eighth and twenty-ninth miles. Leaving the summit at thirty-one miles, a rapid descent is made to Goose Creek Valley, and the line crosses Goose Creek at forty-three miles and twenty-six chains. Through this valley the line passes over rolling hills to the south boundary of Idaho. From the seventh mile to the Idaho boundary the country is represented as well watered by springs and brooks and valuable for grazing purposes. It contains no timber suitable for the manufacture of lumber, but is covered with a scattering growth of piñon and dwarf cedar.

South from the initial point the line passes over the Pilot Peak range of mountains. At the twenty-seventh mile is reached an arm of the Great Desert, and after crossing a low limestone range, another arm, extending from the forty-second to the fifty-fourth mile. These tracts, as well as the salt marsh, which extends from the fifty-fourth to the sixty-first mile, with the broken country onward to the summit of the Toano range, are almost entirely barren and destitute of vegetation. From the summit of the Toano range to that of the Deep Creek Mountains, at the one hundred and eighth mile, meadows covered with bunch-grass are found, and the land is cultivated to a limited extent. On the southern slope of the Deep Creek Mountains cedar and piñon abound, with considerable fir and pine. After leaving the Deep Creek range the line crosses the Snake Mountains, and at the one hundred and twentieth mile enters Snake Valley, following the western slope and crossing Lake Creek at one hundred and seventy-seven miles it continues on the east-



ern slope until at the two hundred and fifth mile, after crossing a narrow valley, it enters the low range of hills which border the eastern side of Snake Valley. The land throughout this region, with the exception of limited areas in the immediate vicinity of the numerous brooks and springs, is a useless desert. The low range of hills extending from the two hundred and eleventh to the two hundred and fiftieth miles is well timbered, and good lumber can be manufactured from the yellow pine which is found in abundance. The southern slope of this range is densely wooded with low cedars, but is apparently destitute of water. The springs and smaller streams of this region invariably sink into the ground, at intervals reappearing, as in the case of the Grand Wash, and flowing afresh as if from a new spring. At the two hundred and fifty-fifth mile the ridge which forms the divide between the waters of the Great Basin and the Colorado River is crossed. Southward the country is barren and assumes a more decidedly tropical character. Scattered groves of cedar and piñon are found from the summit of the divide to the two hundred and eighty-first mile. The mountains are here precipitous and the brooks flow in deep gorges, which are impassable except near their sources. A broad high table-land, barren, and covered with cactus, is found from the two hundred and eighty-first mile to the three hundred and thirteenth. At two hundred and ninety-eight miles and fifty-six chains a monument was erected to mark the intersection of the thirty-seventh parallel of north latitude with the eastern boundary of Nevada, being a point common to this boundary and to the line between Utah and Arizona.

The line now enters the narrow but fertile valley of Virgin River, where the bottom-lands are suited to the production of all kinds of vegetables and tropical plants. Thence the line crosses the barren range of the Virgin Mountains, reaching the summit at the three hundred and twenty-fourth mile, and from that point over bare precipitous rock the line proceeds to the Colorado River, which it reaches at three hundred and fifty-six miles and twenty-three chains from the initial point. Much of the mountain region along this line contains indications of the precious metals, and at several points mines of limited extent are in active operation.

The line was marked with about 350 wooden posts, of which 170 were of cedar, 67 of cottonwood, 37 of pine, 30 of fir, 24 of piñon, and the remainder of mountain mahogany and other woods. Most of these posts were established in mounds, within which were placed a stone marked + or B, and in cases where this method was inconvenient, charred blocks were substituted. In twenty-five instances, points of the line were designated by a mound of turf, or stone, or by a marked rock. About fifty of the mile-points, either from their inaccessible character or from the nature of the ground and the difficulty of procuring proper materials, were not commemorated by monuments of any kind. The whole of the line as established was four hundred and one and a half miles.

2. *North boundary of Utah.*—An appropriation of \$6,480 for the survey of the northern boundary of Utah having been made by act of Congress, approved March 3, 1871, a contract was entered into May 18, 1871, by this office with Daniel G. Major to survey and mark the boundary line in the field.

This boundary line extends from the intersection of the forty-second parallel of north latitude with the thirty-fourth degree of longitude west from Washington, westward on said parallel to its intersection with the thirty-seventh degree of longitude west from Washington, and defines the



respective jurisdictions of the Territory of Idaho on the north and Utah on the south. Information has reached this office that the longitude of the eastern terminus has already been established at Evanston, a station on the Union Pacific Railroad in Wyoming, near the eastern boundary of Utah, the astronomer having availed himself of telegraphic communication with Salt Lake City for that purpose.

Observations for locating the forty-second parallel of north latitude at its intersection with the thirty-fourth degree of longitude west from Washington have also been completed, and the work of marking the parallel is in vigorous prosecution.

Observations for latitude will be taken at some point intermediate between the eastern and western extremities of the boundary, the western terminus having already been determined both in latitude and longitude by Mr. Major in the examination of the eastern boundary of Nevada. At each of the points where observations for longitude were taken I am informed that the results were satisfactory.

3. *Western boundary of Wyoming.*—The public surveys in northeastern Utah having progressed already to close proximity to the western boundary of Wyoming, a necessity exists for defining the respective jurisdictions of the two Territories. The line in question, so far as it is common to Utah and Wyoming, extends from the intersection of the forty-first parallel with the thirty-fourth degree of longitude west from Washington, north on this meridian to its intersection with the forty-second parallel, a distance of about seventy miles. As the longitude of Evanston, near the southern extremity of this line, has been satisfactorily determined, as well as the intersection of the forty-second parallel with the thirty-fourth meridian, one set of observations for latitude only will be required, so that \$40 per mile is believed to be sufficient compensation for surveying and marking this line in the field. It is, therefore, recommended that \$2,800 be appropriated for this purpose.

4. *Southern boundary of Wyoming.*—This line is coincident with the forty-first parallel of north latitude, and extends from the twenty-seventh to the thirty-fourth degree of longitude west from Washington, an estimated distance of three hundred and seventy miles. It separates the jurisdiction of Wyoming on the north from that of Colorado and Utah on the south.

The extension of the lines of public survey, both in Colorado and Wyoming, renders it highly important that this line should be established in the field. The country over which it passes is for the most part exceedingly rugged and impracticable, and its great length will render frequent observations for latitude a necessity. It is thought that the work cannot be properly performed for less than \$60 per mile, and it is therefore recommended that \$22,200 be appropriated for the survey of this important line.

5. *Western boundary of Kansas.*—The necessity for a survey of this line has long existed and was partially recognized by a former appropriation of \$2,500, an amount entirely disproportioned to the work, and subsequently rendered unavailable for the purpose by the act of July 12, 1870, by which it reverted to the treasury. This line extends along the twenty-fifth meridian of longitude west from Washington, from the thirty-ninth to the fortieth parallel of north latitude, an estimated distance of two hundred and ten miles. The country over which it passes is almost without timber, which will render the erection of monuments a labor of great difficulty. The intersection of the twenty-fifth meridian with the thirty-seventh parallel should be established with great accuracy. It is accordingly recommended that \$8,400 be appropriated to

survey and mark this boundary line in the field at a rate not exceeding \$40 per mile.

6. *South boundary of Colorado.*—It is recommended that an appropriation of \$2,400 be made for the survey of that portion of the south boundary of Colorado which lies between the twenty-fifth and twenty-sixth meridians of longitude west from Washington, the amount of the appropriation to be applied at a rate not exceeding \$40 per mile.

*Eastern boundary of New Mexico.*—The small portion of this boundary which lies between the northern boundary of Texas and the thirty-seventh parallel of north latitude is still unsurveyed. It is recommended that the sum of \$1,400 be appropriated for the survey of this line at a rate not exceeding \$40 per mile for an estimated distance of thirty-five miles.

*Northern boundary of Nevada.*—This line is coincident with the forty-second parallel of north latitude, and extends from the thirty-seventh degree of longitude west from Washington to the one hundred and twentieth degree of longitude west from Greenwich—an estimated distance of three hundred and ten miles.

The public surveys on both sides of this line are rapidly approaching the limits of the respective jurisdictions in which they are situated. As this line would extend over a region not readily accessible, and which is for the most part rugged and difficult, it is recommended that an appropriation of \$15,500 be made, to be applied at a rate not exceeding \$50 per mile, for the purpose of accurately defining the boundary line.

*Eastern boundary of California.*—By the act of Congress approved May 26, 1860, the sum of \$55,000 was appropriated for the survey of the eastern boundary line of California. This boundary is defined in the State constitution of California as extending from the point of intersection of the forty-second parallel of north latitude with the one hundred and twentieth degree of longitude west from Greenwich, and running south of the line of said one hundred and twentieth degree west longitude until it intersects the thirty-ninth parallel of north latitude; thence running in a straight line in a southeasterly direction to the Colorado River at a point where it intersects the thirty-fifth parallel of north latitude. The work was first prosecuted through a "superintendent" under direction of the Secretary of the Interior, and subsequently passed into the hands of the General Land Office; not, however, until the funds available from the appropriation had been uselessly expended in determining two of the points of the boundary, neither of which is considered by this office available for the purposes of resurvey.

In 1863, under the joint supervision of California and Nevada, the line was extended north from Lake Bigler to its intersection with the forty-second parallel of north latitude. The subsequent operations of Mr. Major, who surveyed the northern boundary of the State of California in 1868, raise serious doubts as to the accuracy of this line.

The public surveys which have reached Camp Bidwell, the site of Mr. Major's observatory, afford a reasonably-accurate means of comparing the one hundred and twentieth meridian as actually marked under the joint action of California and Nevada, with Mr. Major's determination of the same. The line as actually surveyed is thus found to be about two miles and thirty chains east of the point where the same falls by the computations of Mr. Major.

The observations for longitude at Camp Bidwell were conducted with great care through a period of three lunations. So great a discrepancy ought not, therefore, to pass unnoticed; and since the survey of 1863 has never been recognized by Congress as the true boundary line between



California and Nevada, it is deemed of the highest importance that a new determination of the point of intersection of the one hundred and twentieth meridian with the thirty-ninth parallel, and a resurvey of the boundary to its intersection with the forty-second parallel of north latitude, be ordered by Congress. One hundred and twenty miles and forty-six chains from the initial point in Lake Bigler, on the southeastern portion of the boundary, were surveyed in 1863 under the same authority. The difficulty of running a long transit line at a large angle with the meridian requires no discussion. Mr. Butler Ives, under whose direction as surveyor the line was run, in his report to the Nevada legislature says: "This line cannot be considered as absolutely correct until it is continued to the Colorado River, and the error of intersection with the initial point there corrected back to Lake Bigler." Therefore, this portion of the line can in no sense be considered as properly established in the field. The public surveys have reached the boundary through a large portion of its extent, and an urgent and increasing necessity exists that his most important line may be established by the proper authority at the earliest possible day.

In view of the foregoing facts, an appropriation by Congress of \$41,250, to be expended at a rate per mile not exceeding \$50 for the portion north of the initial point at Lake Bigler, and \$75 for the portion south of the same, is recommended.

10. *Boundary between Georgia and Florida.*—Under the provisions of an act of Congress approved May 4, 1826, a commissioner was appointed on the part of the United States to act in conjunction with a commissioner appointed for the State of Georgia to ascertain and mark in the field between the State of Georgia and the Territory of Florida a straight line from the junction of the Flint and Chattahooche Rivers to the head of the St. Mary's, the same being the common boundary of these two jurisdictions as defined in the above-mentioned act. Andrew Ellicott, who, in 1799 and 1800, had surveyed the then southern boundary of the United States on the thirty-first parallel of north latitude, from the Mississippi to the Chattahooche, seems not to have completed the survey from the Chattahooche to the source of the St. Mary's River, but simply to have established a mound one mile south of what he deemed the true source of that river. This mound, it seems, had been taken as being *itself* the actual terminus of the boundary, by McNeil, in 1825, previous to the survey under the act to which reference is made above; and this, coupled with the fact that the commissioners found themselves constantly diverging from what they supposed to be the true line, caused the authorities on the part of Georgia to withdraw their consent to further operations, on the ground that more particular investigation as to the true source of the St. Mary's was needed. The commissioners, however, ran a "back line" from the junction of the Flint and Chattahooche Rivers as established by McBride, and had proceeded as far as the Wythlacooche, when the swollen condition of that river compelled them to suspend operations. The matter was left in this unfinished condition, and no subsequent official action of a definite character is known by this office beyond the act of Congress approved April 13, 1860, which provided for the adjustment of titles whenever the boundary shall be ascertained, surveyed, and properly confirmed.

It is of great importance that legislation by Congress be had on this subject, looking either to the adoption of some one of the existing lines, or the survey of a new line, according to the true and original intent of the treaty made with Spain in 1795.

During the past two or three years the rapid extension of the public

surveys has shown a necessity for the definite establishment of boundary lines between the various States and Territories. It is desirable not only that settlers near the boundary line of adjoining jurisdictions may know to which of them their franchises properly belong, but also that titles once established may rest undisturbed.

Much special legislation has been enacted and useless expense has been incurred in the settlement of titles granted under a jurisdiction from which they were subsequently either wholly or in part removed by the survey of a boundary line. The permanent establishment of boundary lines would also be of great advantage to the Government in the prosecution of the work of surveying the public lands.

The mileage heretofore allowed for these boundary lines has in too many cases proved entirely inadequate for the quality of work which was needed, and in some cases the amounts appropriated have reverted to the Treasury, because suitable persons could not be engaged to perform the service for the insufficient compensation offered.

The foregoing estimates have been made with the especial view of securing an accurate, durable, and conspicuous marking of all lines by competent and reliable astronomers, and the amount in each case has been carefully considered with reference to the particular difficulties and requirements to be met.

#### 7.—INDIAN LANDS.

Provision is made by the act of Congress of February 6, 1871, for the sale of certain lands in Shawanaw County, Wisconsin, set apart for the Stockbridge and Munsee tribes of Indians. Under this act the lands have been appraised, and the district land officers at Menasha, Wisconsin, instructed to offer the same for sale at their appraised values, after three months' public notice, and to allow private entry to be made of the unsold lands after the close of the offering, but at not less than the appraised values. Cash only is receivable in payment for these lands. At the expiration of a year the lands then remaining unsold are to be again offered at not less than the minimum of \$1 25 per acre, and those remaining unsold after the offering are to be subject to private entry at not less than \$1 25 per acre. Provision is also made for a reservation of not more than 18 contiguous sections for certain of said Indians, and such reservation having been designated by the proper bureau, the land officers have been directed to withhold the same from any other disposition.

#### 8.—INDIAN RESERVED LANDS.

Under the treaty of August 2, 1855, with the Chippewas of Saginaw, Swan Creek, and Black River, townships 17 and 18, in ranges Nos. 3, 4, and 5, in the East Saginaw land district, Michigan, were selected for the benefit of said Indians. The honorable Secretary of the Interior having been informed by the Indian office, May 13, 1868, that said lands were no longer needed for the use of the Indians, directed, under date of July 14, 1868, that the same be restored to market, under circular of January 1, 1836.

In accordance with the above instructions, this office proceeded to restore said lands, on the 5th of June last, by regular advertisement, and returns for that month from the East Saginaw office show sales of 17,125 acres for \$61,470, cash.

## 9.—OSAGE INDIAN TRUST AND DIMINISHED RESERVE LANDS IN KANSAS.

The twelfth section of the act of Congress approved July 15, 1870, (Stats., vol. 16, p. 362,) provides that the lands of the diminished reserve, as well as those held in trust for the Osage Indians, shall, with their consent, be disposed of to actual settlers in "square form" and in quantities not exceeding 160 acres to each settler. Payment to be made within one year from date of settlement or of the act.

With the knowledge possessed by this office as to the conditions and requirements of the settlers it became a question as to whether it was the purpose of Congress to limit claims to actual technical quarter sections. After mature deliberation it was thought best to give a more liberal construction to the act, and instructions were prepared authorizing claims to be taken in any shape that would present parallel sides; and in the matter of payments, the instructions require: 1st. From those who settled prior to the act, either upon the diminished reserve or the trust lands, proof and payment for the same on or before the 15th of July, 1871. 2d. From those who settle after the passage of the act, proof and payment within one year from the date of settlement; such settlement must, however, be upon surveyed lands, and no settler is allowed to claim, as against an adverse interest, any privilege by reason of settlement prior to the act on unsurveyed lands, but must date his settlement in such a case subsequent to the survey.

The settlers are also required to file declaratory statements, as under the pre-emption laws, showing the lands claimed by them, and to make affidavit that they have not previously filed for any other tract and thereafter sold or voluntarily abandoned the same, or that they have not sold any portion of the lands claimed by them.

These instructions received the approval of the Department, and under them nearly three thousand settlers came forward and paid for the lands embraced in their respective claims. The acceptance of the act referred to by the Indians was not, however, made known to this office until the 22d October, 1870, and the incompleteness of the surveys at the date of our instructions, March 28, 1871, made it impossible for all the settlers who were required to make payment on or before the 15th July, 1871, to meet this obligation. The Department therefore authorized an extension of the time for sixty days, or until the 15th of September last; but even this indulgence proved to be insufficient, and the time has been further extended to the 15th of November next, with the distinct understanding, however, that no further extension will be granted.

The act further provides that the sixteenth and thirty-sixth sections of said lands shall be granted to the State of Kansas for school purposes. This office has therefore further instructed the district land officers that no claim on said sections initiated after the 22d of October, 1870, the date when this office was informed of the acceptance of the terms of the act by the Indians, will be recognized. The money derived from the sale of the lands is held in trust by the United States for the benefit of the Indians. Therefore all sales are for cash only.

## 10.—USELESS MILITARY RESERVATIONS.

By act of Congress approved July 1, 1870, the Fort Ridgely military reservation in Minnesota was directed to be disposed of under the pre-emption laws of the United States, or at private entry for cash, after having been offered at public sale. The law also legalized all entries for which patents had issued, the General Land Office not having at the



time knowledge of the reservation; and provided that all entries theretofore made, but not patented, should, at the discretion of the Commissioner of the General Land Office, be declared null and void.

A number of pre-emption, homestead, and other locations had been made on a part of these lands, prior to the time when this office was informed of the reservation, some of which had been patented.

Under the law instructions were issued to the district land officers, under dates of October 14, 1870, and February 24, 1871, directing said officers to open the lands not disposed of to pre-emption entry, and also instructing them to give notice to all persons holding *bona fide* homestead claims that they would be allowed to prove up in accordance with the requirements of the homestead laws. Entries, however, which had been abandoned or forfeited for non-compliance with the law, to be cancelled, and the tracts opened to pre-emption entry as provided in the act. The lands south of the Minnesota River, but within the bounds of the reserve, being within the limits of the Sioux Indian reservation, directed to be sold under act of Congress approved March 3, 1863, for the benefit of said Indians, were exempted from the force and effect of the instructions, it being held that such lands comprised no part of the reservation, but were Indian trust lands. These instructions obtained the approval of the Department, and are now being carried into execution.

By an act of Congress approved February 24, 1871, the Secretary of War was authorized to transfer to the control of the Secretary of the Interior, for disposition for cash, according to existing laws of the United States relating to the public lands, after appraisement, to the highest bidder, and at not less than the appraised value, nor at less than \$1 25 per acre, certain United States military reservations, as follows:

Fort Lane, Oregon, estimated area, 640 acres; Fort Walla-Walla, Washington, estimated area, 1,920 acres; Fort Jesup, Louisiana, estimated area, 6,400 acres; Fort Sabine, Louisiana, estimated area, 18,200 acres; Fort Wayne, Arkansas, estimated area, 11,680 acres; Fort Smith, Arkansas, estimated area, ———; Fort Zarah, Kansas, estimated area, 3,068 acres; Fort Abercrombie, Minnesota, estimated area, 6,993 acres; Camp McGarry, Nevada, estimated area, 75 square miles; Fort Sumner, New Mexico, estimated area, 21½ square miles, and so much of Fort Bridger, Wyoming, as may be no longer required for military purposes.

The provisions of the act give discretionary power to the Secretary of the Interior to have the tracts divided into lots of less than 40 acres each, or into town lots should public interest demand it; each subdivision must be appraised and offered for sale separately at public outcry to the highest bidder, after which any unsold land or lot will be subject to sale at private entry for the appraised value, at the local land office.

In case of improvements being found on any tract of land or lot within such reservations, the same, of whatever character, will be appraised, and the purchaser of the tract or lot upon which the same may be situate required to pay for the improvements at their valuation, before a patent will issue for the tract or lot purchased.

In order to carry out the provisions of the act the Secretary of War transferred said reservations to the custody of the Secretary of the Interior on the 6th of April, 1871. On the 4th of August following this office submitted a plan for carrying into effect the provisions of the act, substantially as follows:

1st. That the reservations originally taken by legal subdivisions be not further surveyed.



2d. That the lines be extended over those unsurveyed reservations upon the out-boundaries of which the public surveys have already been closed.

3d. That reservations at a distance from the regular surveys be surveyed into rectangular lots of convenient size.

4th. That appraisement and sale of lots thus surveyed be made by the local land officers unless otherwise ordered.

This plan having been approved on the 8th of August, 1871, action by this office has been taken as follows:

*Fort Smith, Arkansas.*—The War Department having originally purchased land from settlers for the enlargement of the reservation, a letter was addressed to that Department, requesting information as to the precise limits and status of the reserve. As soon as this information is received the necessary proceedings will be instituted for carrying out the provisions of the act referred to.

*Fort Wayne, Arkansas, and Fort Jesup, Louisiana.*—These reservations were originally established by legal subdivisions. In order to ascertain the fact whether, while they were under the control of the War Department, any portions of them have been sold, a letter has been addressed to that Department requesting information as to the precise limits of the reservations as they now exist. Upon the receipt of the requisite information, steps will be taken to have these useless reservations appraised and disposed of as the law directs.

*Fort Zarah, Kansas, and Fort Sabine, Louisiana.*—The surveyors general of Kansas and Louisiana were authorized, August 11, 1871, to cause the lines of the public surveys to be extended over these reservations, in the same manner as other public lands are surveyed.

*Fort Sumner, New Mexico.*—Instructions were issued to the surveyor general of New Mexico, August 16, 1871, to extend the lines over the reservation whenever the public surveys should reach the same, marking distinctly the limits of the reservation in the returns of the survey.

*Fort Walla Walla, Oregon.*—As it appears that a mistake had been committed in the act in describing Fort Walla Walla as being situated in Oregon instead of in Washington Territory, this office addressed the War Department asking whether there was a Fort Walla Walla in Oregon, and in reply that Department gave the opinion that, as there was no such reservation in Oregon, it would require further legislation by Congress before Fort Walla-Walla in Washington Territory could be disposed of. The case being thus circumstanced, no action has been taken by this office looking to the disposal of this reservation.

*Fort Bridger, Wyoming Territory.*—The commanding general of the Department of the Platte was directed by the War Department to locate the new reservation within the limits of the old one and report what parts of the latter are no longer needed for military purposes, so that the same may be subject to the operations of the aforesaid act of Congress.

The cemeteries at Forts Smith, Sumner, and Bridger, were reserved by order of the President, May 22, 1871, and the control of them thus reverts to the jurisdiction of the War Department.

As soon as the surveys can be accomplished and the necessary information obtained, all of the lands not remaining reserved will be brought into market in accordance with the provisions of the act.

#### 11.—OF PRE-EMPTIONS.

Among the most important interests connected with the public land system the various provisions of the pre-emption laws may be con-

sidered. The granting of pre-emption rights at an early day attracted the attention of the national legislature, although it was only after years of agitation and the pressure of popular sentiment that any settlement right was conceded. All the earlier legislation favored the opposite idea, that of absolute prohibition of a general settlement on the public domain. By an act of Congress approved March 3, 1807, settlers upon any tract of the public domain, without express permission from the Government authorities, were liable to forcible ejection and forfeiture of all their improvements, and it was not until September 4, 1841, that a full departure from this restrictive policy was inaugurated. Few modifications of this act have been attempted, and those rather extensions than limitations of the privileges conferred.

Any person seeking the benefits of pre-emption under the laws now in force must be the head of a family, a widow, or a single man over twenty-one years of age, a citizen of the United States, or must have filed a declaration of intention to become such, and not the owner of 320 acres of land within the United States, and must be a person who has not quit or abandoned his or her own land in the same State or Territory to reside upon the public lands.

Actual settlement upon the tract claimed for the exclusive use and benefit of the pre-emptor, and not for purposes of sale or speculation, must be shown under the rules and regulations of the Department to the satisfaction of the register and receiver. Upon these simple requisites, entry may be made to the extent of one-quarter section, or other compact body not exceeding 160 acres, upon any of the public lands of the United States to which the Indian title has been extinguished, except in the States of Alabama, Mississippi, Louisiana, Arkansas, and Florida, in which, by special act of June 2, 1866, the public lands are brought exclusively within the provisions of the homestead act.

To secure these privileges the settler must comply with the provisions of law as expressed in the acts of Congress, which are substantially as follows: Upon offered lands, which designation for the purposes of the statute is held to cover all lands which have once been formally offered at public sale, even though afterward temporarily withdrawn, he must file with the register of the proper land office his written declaratory statement, describing the tract and giving the time of settlement. This filing must be made within thirty days after settlement, and within twelve months from such date of settlement he must present proof of cultivation, and make payment for the land so described. Upon unoffered lands, the filing must be made within three months from the date of settlement, and within thirty months from such prescribed date of filing, or thirty-three months after settlement, the requisite proof and payment must be made. When the settlement is upon unsurveyed lands, of course no filing can be made, describing it by legal subdivisions, but after survey, and within three months after the filing of the township plat in the district land office, the settler must file his declaratory statement, and within thirty-three months from the filing of the township plat, proof and payment are required. Forfeiture of the land claimed is incurred by failure to comply with either of the respective conditions named above. The law has been strictly enforced on appeal in several recent cases, where the party had filed previous to the inception of an adverse claim, and after the period prescribed by law; which is a modification of the former practice, the rule formerly being that a party who had actually put himself on the record as a settler prior to the inception of any adverse settlement, although not within the time named in the statutes, had, in connection with his actual settlement,



given sufficient notice for his own protection. It is thought proper to give full publicity to the change in construction, so that settlers may not incur forfeitures by neglect to put their claims on record according to the positive requirements of law.

In the adjudication of pre-emption cases the fact has become apparent that a very large number of claims are at some stage of the proceedings made the subject of complaint. Many of these contests arise from actual adverse interests, but a large number of them are initiated by parties who have no interest in the land, with a view of taking advantage of some alleged defect in the proceedings for the purpose of appropriating to their own use and benefit the labor and improvements of the parties who have made the claim. Even after entry and payment these complaints are frequently preferred, and charges of irregularity on the part of pre-emptors are continually presented.

In view of the facts, that it is not the province of this office to administer punishment or to declare forfeiture, except where such action becomes necessary to the immediate disposition of a case under the law; and that to encourage litigation is contrary to sound public policy; that when proof and payment have been made under the law and rules of the Department, without being questioned by parties in the neighborhood, who had ample opportunity of knowing what claims had been filed; that no stranger to any interest in the land at date of entry can be injured by the issue of a patent; that the full price of the land having been paid, the question remains solely between the pre-emptor and the Government, it is a matter for serious consideration whether parties having no interest in the land should be allowed to initiate a proceeding against an entry already consummated, with a view to further investigation of the good faith of the pre-emptor, and the ultimate cancellation of his entry.

Mr. Secretary Smith, in a decision dated January 15, 1862, in the case of Clark M. Dennis, from the Doniphan, Kansas, district, fully sustained the decision made by this office August 29, 1861, declining to order an investigation after entry, prayed for on the ground of alleged fraud, the party seeking such investigation having, at the date of entry, no interest in the land.

On the 9th of April, 1862, in the case of James C. Vanderpool, from the same office, the Secretary reiterated the doctrine of the former decision, and declined to allow an investigation of the charge of fraud in the pre-emption. Under the administration of my immediate predecessor a contrary practice has grown somewhat into favor, and investigations appear to have been ordered to determine charges of fraud brought by strangers to any interest in the lands claimed, and in some cases forfeiture has been declared after such investigations.

On the general principles stated above, however, and in consideration of the great expense attending these hearings; the well-considered doubts entertained by lawyers and judicial authority, as well as by Department officers, upon the question of how far the jurisdiction of the Executive Departments extends to review cases once passed upon and decided upon first presentation, after which the issue of patent is ordinarily a mere ministerial act; and in further consideration of the undue accumulation of such cases upon the dockets and files of the office, whereby merely frivolous and unsubstantial interests interfere to prevent the disposal of cases involving the most important private rights, I have deemed a return to the former practice to be a matter of essential reform, necessary to the best interests of all concerned, and have therefore declined to order hearings after entry in pre-emption cases,

except upon request of parties having color of right or interest in the land prior to the date of such entry. These remarks lead to a phase of the same subject which has from the first prominently presented itself in connection with the pre-emption system, namely, the proper methods to be taken for the protection of the Government interests in the public lands, in view of the frauds, so frequently brought to light, under the pre-emption laws.

The frequent proofs of fraud in pre-emption cases, or at least of most palpable and inexcusable evasion of and want of compliance with the strict letter of the law, may well suggest doubt as to whether, on the whole, some better method for the disposal of the public lands cannot be devised, securing at once protection and encouragement for the settler, and safety and economy for the Government. The law was passed at a period when access to the public lands and means for payment were far more difficult than at present. The great rush of settlement had not then pushed its way into remote regions, nor had the great railroad enterprises of the country given their impetus to the onward movements of civilization.

The great advantages of the homestead law had not then been vouchsafed to the pioneer, nor were its provisions entertained, even in idea, by the most progressive minds of the nation. It is natural to conclude that a law adapted to the state of society existing at the period when pre-emption rights were first recognized may have ceased to secure, in the changed condition of affairs, all the advantages it was intended to confer, or effectually to provide, in the same changed condition, all the safeguards originally guaranteed.

Indeed, there is, in my judgment, a question as to whether or not the pre-emption law is any longer a necessity to our land system. The provisions of the homestead law were undoubtedly sufficient at the date of its passage for a measure of complete substitution for the pre-emption system, if we except the omission of the single feature of priority of settlement, which failed to be recognized.

With the added experience of over eight years of administration of the two systems in immediate connection, it is believed that a complete unification of the law of settlement-rights is now not only desirable but easily attainable. To secure this I would recommend the following legislation, viz :

1. The repeal of all existing laws granting pre-emption rights.
2. The modification of the homestead law by consolidation into a single statute of its main provisions, with the following additional features :
  - a. The recognition of priority of settlement as a basis of the right to take a homestead embracing the house of the settler, or permanent improvements already made with the intention of actual residence. To secure this privilege I would recommend that sixty days after settlement, or after filing the township plat where such plat has not been filed prior to date of settlement, be allowed within which entry must be made; also that any party making entry under the law be required to make oath, in connection with the usual affidavit, that, to the best of his knowledge and belief, there is no person residing on the land sought to be entered, entitled to enter the same as a homestead. After sixty days no contest based on alleged prior settlement should be allowed against the homestead entry.
  - b. The right, after the lapse of eighteen months from date of entry, to pay for the land at the proper Government price, and receive a patent therefor, upon making satisfactory proof of settlement and cultivation



and actual residence upon the land, initiated within six months from date of entry, and continued up to the date of payment.

A restriction as to quantity that shall be reasonable and uniform, allowing 160 acres or a less quantity outside of railroad limits; and not exceeding 80 acres, or one-half quarter section, inside such limits, whether upon odd or even sections of Government land. In entries of adjoining half-quarter or quarter-quarter sections where a slight excess appears, I would recommend a proviso that such small excess be treated as properly included in the entry, without requiring cash payment therefor in making the homestead entry.

c. A positive restriction of the privilege to a single entry by the same person, except where his entry is canceled for reasons other than a failure on his part to comply with the terms of the law; providing, however, that no person who has not heretofore made entry under the homestead law, shall be debarred from entry on account of having entered or filed under the pre-emption law.

The great ends to be secured by this proposed consolidation of the homestead and pre-emption laws are the following:

1. The harmonious adjustment of conflicting claims under the operation of this office, thereby giving a consistency and uniformity to its administration not otherwise attainable.

2. The prevention of irreconcilable conflicts between different settlers; one claiming under the pre-emption law, based upon alleged priority; the other presenting a claim equally equitable under the homestead act, which does not recognize such priority.

3. The total discontinuance of the pernicious practice of speculators who flock along the great lines of projected railroads, and into other sections of country giving promise of favorable development, and by merely filing declaratory statements upon the public lands, prevent their acquisition by *bona fide* settlers and secure and hold claims for purposes of illegal sale. This practice has compelled honest pioneers to purchase the fraudulent claims of such illegal pre-emptors or incur expensive litigation to secure title; it has harassed and vexed those who in good faith made actual settlements, and delayed and prevented the disposal of the public lands; it has caused an excessive and unprofitable expenditure of the labor and money of the Government, as well as of the settlers in proceedings to adjudicate the questions thus forced upon them.

4. The certainty of a speedy settlement of conflicting interests by the simplicity of the action required to establish priorities, and other proofs of compliance with law.

5. An additional revenue to the Government from the fees required in the inception of a claim by formal entry which actually appropriates the land, and which offers a greater incentive to its final consummation by patent, than a mere informal filing made without appreciable cost, and held as lightly as it is easily initiated.

6. The clearing from the Government records of a vast accumulation of filings, many of which are purely fictitious, never intended in good faith, but are merely the designations of the claims of speculators, and thus stand to the prejudice of *bona fide* claimants.

To effect this clearing of the records, a day should be fixed for the beginning of the operation of the revised statutes, prior to which all pre-emptions should be required to be paid for under proper proof, or transmuted to homestead entries in case parties are too poor to pay for the tracts filed upon.

These are radical changes in administration merely, not in policy. The



great pre-emption feature of our system would still remain, and its advantages would reach a class now wholly debarred from its benefits, viz, the poorer settlers who are unable to pay for their lands under the pre-emption law, and who are unwilling to declare under it for the purpose of securing priority, while they are conscious of an utter want of intention to consummate their entries. In the Southern States, too, where, perhaps, a greater number than in any other section are in need of such privileges, the benefits of the pre-emption laws are now absolutely prohibited. The extension of the settlement feature to the homestead law would at once bring them within its beneficent provisions and inaugurate a system common to all parts of the country.

The privilege of making payment after eighteen months, and at any time within the five years, would equally provide for those who prefer to secure title in that manner and those who might be forced, by change of circumstances, to resort to this method of consummation. Proof of settlement and cultivation to time of payment would then, as now, be available to all such claimants.

## 12.—HOMESTEAD LAW.

This law has worked the "greatest good to the greatest number," having induced thousands to become producers instead of consumers, thereby adding to the material wealth of the country; yet under its operations many hardships have arisen which the law-makers could not have foreseen and provided for, and which cannot be relieved without additional legislation.

First, it frequently occurs that a party, after initiating a homestead entry, abandons his family and his claim, while his wife and children remain on the land, and that the wife, after having fulfilled the term of occupancy required by the law, dating from the time of her husband's entry, applies to this office for a patent to the homestead in her own name. As under the law the patent cannot be issued on the husband's entry in the name of any other party, except in the event of his decease, the only relief which this office can afford in such cases is, upon a proper showing of the facts, to declare the husband's entry forfeited for abandonment, and allow the wife, as head of the family under the law, to enter the land in her own name. In such an event, however, she is exposed to the risk of losing her homestead, for she is not entitled to a preference right of entry; and even if she succeed in making the entry, the period of her settlement and cultivation of the land under the husband's entry, from its date to its cancellation, cannot be credited to her on her own entry, as the law requires each person to make proof of settlement and cultivation for five years from the date of entry. This may be remedied by an amendment providing that upon satisfactory proof of abandonment the patent shall, after proper showing of compliance with the terms of the law, issue in the name of the wife.

Second, homestead claimants commuting under the eighth section of the act of the 20th of May, 1862, should be allowed to use agricultural college scrip on an equal footing with pre-emptors, paying for their claims under the act of 1st July, 1870, which by existing law is not allowed.

Since the last annual report a number of cases under the homestead law have been presented to this office, wherein the parties have made full proof of settlement and cultivation, but did not present the same within the seven years from date of entry as required by law. As the law does not in terms declare a forfeiture of the claim for this failure to come forward within the time specified, I have considered such cases, where satisfac-

tory reasons are given for the laches, as proper for submission to the board constituted under the act of August 3, 1846, as amended by the subsequent acts of March 3, 1853, and June 26, 1856, to confirm certain equitable cases, and have been sustained in this view by the other members of the board in the confirmation of a number of these claims.

Application was made to pre-empt a tract of land embraced in an odd-numbered section within the limits of the grant to the Burlington and Missouri River Railroad Company, in Nebraska, which was covered by a homestead entry at the date of definite location of the line of the road, but which entry was subsequently canceled. It was held in this case that, by the terms of the grant, all lands to which a homestead right had attached at the date of such definite location, were exempted from the operation of the grant, and that upon the abandonment and cancellation of such rights the tracts became public lands, subject again to the operations of the homestead or pre-emption laws.

This principle has also been considered applicable to pre-emption claims existing on lands at the date of the definite location of the road, and as applicable alike to the granted and indemnity limits.

Under these principles, set forth in various rulings of the Department, the right of the railroad companies to such lands is no longer recognized.

By the decision of a former Secretary of the Interior, it was held that a pre-emptor who settled before a railroad withdrawal, could not afterward commute his pre-emption to a homestead entry so as to defeat that adverse interest. Under the ruling, however, above cited the pre-emption claim withdraws the land from the operation of the railroad grant, and the settler may, as in other cases, commute his right to a homestead.

It was also formerly held that a pre-emptor upon unsurveyed lands could not, after survey, file upon the land and then commute to a homestead entry, but the present head of the Department has expressed the opinion that the law is not adverse to such commutation.

As one of the principal objects of the homestead law is to bring into profitable cultivation the vast extent of our public domain while providing homes for all who may avail themselves of the privilege of the law, it is a matter well worthy of consideration whether or not justice cannot be done to a meritorious class of our citizens, and at the same time the main object of the law in adding to the productive area be attained.

I refer to the soldiers of the Union in the late war, whose services in defense of our homes should entitle them to favorable and liberal provisions for securing homes for themselves.

I would recommend that the term of service rendered by a soldier in the war of the rebellion, be recognized by legislation to the extent of allowing the same to be deducted from the five years' settlement and cultivation required by law.

### 13.—GRADUATED LANDS.

Attention is respectfully called to a large number of unadjusted cases under the act of August 4, 1854, entitled "An act to graduate and reduce the price of public lands to actual settlers and cultivators." In all cases where the entries appeared to be regular they were passed for patenting, and patents prepared subject to delivery on proof of settlement and cultivation subsequent to the entry. There remain on the files of the General Land Office a large number of patents for the class of entries above referred to, for which the parties claiming under the same have never applied. Under the provisions of the act of March 3, 1857,



graduation entries made prior to the passage of the act, in which the purchaser had made the affidavit and paid the purchase-money as required by the act of August 4, 1854, and the instructions issued under said act in force and in the hands of the register at the time when such entries were made, were legalized and patents ordered to issue without requiring proof of settlement and cultivation by the purchaser. Under this act nearly all of the entries made prior thereto have been patented and the patents delivered. On entries made subsequent to this act, there yet remain a number of patents undelivered, which are only surrendered on proof of continuous settlement and cultivation from the date of entry to the date of application for patent, notwithstanding printed instructions were sent to the registers and receivers to notify the purchasers that proof of settlement and cultivation of the lands entered would be required within one year from the date of entry to entitle them to patents. In the absence of such proof, payment of the difference between the graduated price paid and \$1 25, the ordinary minimum price per acre, has been, and still is, required to be made as a condition precedent to the delivery of the patent.

In addition to the entries which are held for proof of settlement and cultivation, but which are regular in other respects, there are a large number of cases suspended for other causes, prominent among which are informalities in the graduation affidavits; most of these errors, however, are only clerical. Prior to the repeal of the act of August 4, 1854, the class of errors and informalities just referred to were reported to the district officers, with instructions to notify the parties in interest and allow them to correct them. Many, however, failed to make the corrections or offer the proof of settlement and cultivation within one year, as required by said instructions. In such cases we have granted the parties the privilege of making payment of the difference between the graduated price and \$1 25 per acre, thus placing these claims on the basis of ordinary cash entries, whereby the graduation affidavit and proof of settlement and cultivation are dispensed with altogether. Under this privilege a number of the suspended cases have been disposed of. The adjustment of this class of claims is both tedious and difficult, and involves much correspondence; this is mainly due to the fact that in a majority of cases now being acted upon, the parties applying for patents have purchased the lands in ignorance of the provisions of the law from those who entered them. In many instances the present claimants have made valuable improvements on the lands thus purchased, and in other cases the fact that parties feel secure in their titles prevents them from making inquiries relative thereto, and consequently this office is unable to reach them through the ordinary channels, and demand the additional payment or claim a forfeiture for non-compliance with the statute.

In consideration of the large amount of this class of lands, upon which extensive improvements have been made by parties who are ignorant of their true status, any action tending toward vacation of these imperfect entries on the ground of non-compliance with the statute, or for other cause, must necessarily work a great hardship to a meritorious class of citizens residing upon and claiming the lands. On the other hand there is reason to believe that a very considerable portion of the entries were made by unscrupulous parties, in contravention of law, for the benefit of speculators who relied upon Congress to confirm the entries by an act similar to that of March 3, 1857, dispensing with proof of settlement and cultivation. Under the circumstances justice would seem to dictate the confirmation of all entries where parties have, in good faith, improved the lands to which they believed they had acquired

perfect titles. I would, therefore, respectfully suggest that an act be passed by Congress confirming the entries in all cases where the present owners may submit, within two years from the passage of the act, satisfactory proof that they have made substantial and valuable improvements on the land claimed by them, and providing further that in all cases where such proof shall not be submitted within the time fixed by said act, the entries shall be canceled.

#### 14.—TOWN SITES.

The act of Congress approved March 2, 1867, (U. S. Stats., vol. 14, page 541,) amendatory of the acts of July 1, 1864, and March 3, 1865, grants to the inhabitants of cities and towns on the public domain the privilege of entering the tracts covered by town-site improvements, at the rate of \$1 25 per acre; the entry to be made by the corporate authorities, or, in case the town is not incorporated, by the proper county judge. The provisions of this act must be complied with by filing or entry prior to the sale of the body of land in which the town site may be included.

The act of 1867 is preferred to that of July 1, 1864, (Stats., vol. 13, page 343,) for the reason that under the first mentioned act the patent issues to the corporate authorities or county judge, and then, under an act of the legislature of the State or Territory, patents are issued to each claimant of a lot.

The act of June 8, 1868, (Stats., vol. 15, page 67,) provides that the inhabitants of any town located on the public lands may avail themselves of the provisions of the act of March 2, 1867, but also provides that the issue of patents to parties who have made entries or who elect to proceed under previous statutes be not prevented.

The act of 1867 provides that where the number of inhabitants is one hundred, and less than two hundred, the entry shall not exceed 320 acres; where the number is two hundred and less than one thousand, not more than 640 acres can be entered; and where the inhabitants number one thousand and over, not more than 1,280 acres; and for each additional one thousand inhabitants, (not exceeding five thousand in all,) 320 acres.

When towns are located upon surveyed land, the entry should conform to the legal subdivisions, and when upon unsurveyed lands the necessary expenses of platting and surveying must be paid by the town authorities, and after the extension of the public surveys the lines will be closed upon the exterior limits of the town. The town authorities or county judge must file a declaratory statement with the register of the proper land office, and if there is no organized land district, the filing must be made with the surveyor general.

The act of 1867 excludes from entry as a town site any lands claimed as mineral, or those embraced in military or other reservations, or covered by a Spanish grant.

In reference to the locations of town sites on the public lands, there has been no new legislation by Congress except the extension of all the town-site laws to the Osage Indian lands in the State of Kansas.

The most important ruling by the Department, since the last report, has been based upon the opinion of the Assistant Attorney General reversing the decision of this office of July 20, 1870, in the matter of the application to enter the town of Springville, Montana Territory.

This office rejected the application on the ground that said town contained but fifty or sixty inhabitants. The Assistant Attorney General advised a reversal of our decision, holding that towns with less than one



hundred inhabitants can enter and obtain title to the public lands under the act of March 2, 1867.

In a decision of August 5, 1871, in the contested case of *Salt Lake City vs. John J. Slossen et al.*, the Department held that the selection of tracts of land by town authorities for purposes of trade withdraws the same from pre-emption, notwithstanding such lands were occupied only in part by town improvements at the time of the selection.

#### 15.—EDUCATIONAL LAND BOUNTY.

An important part of the business of the General Land Office is that which arises under the various acts of Congress providing a land bounty in aid of popular education. By the ordinance of May 20, 1785, the sixteenth section of every township was set apart for the support of common schools. In organizing new States and Territories the policy thus indicated has since been adhered to as a settled principle. In 1848, when Oregon was established, an additional section in each township was set apart for schools in that Territory, making the reservation two sections, the sixteenth and thirty-sixth, in every township, and this example has been followed in all new States and Territories since organized containing public lands. The aggregate quantity which, pursuant to this policy, has been granted in the States and reserved in the Territories for common-school purposes therein respectively, is estimated at 67,983,914 acres. As soon as, in running the lines of the public surveys, the school sections "in place" are fixed and determined, the appropriation thereof for the educational object is, under the law, complete, except where they are found to be covered by prior adverse rights. In such cases equivalent tracts are reported as indemnity therefor by the district land officers, who will accept suggestions of desired tracts from the local school authorities, which, on being received here, are entered upon our books, carefully examined, and where found free from objection, are submitted to the Secretary of the Interior for his approval. On being approved by him, they are certified by this office to the State authorities, and become appropriated for schools equally with the regular school sections. The same course is pursued with selections under the act of 20th May, 1826, of school land for townships in which the sections sixteen and thirty-six are, for certain causes, deficient. During the last fiscal year the quantity of land which was certified as school indemnity is 115,371.06 acres.

For the support of seminaries or schools of a higher grade, the quantity of two townships at least, and, in some instances, more, has been granted to each of the States containing public lands, embracing the quantity in the aggregate of 1,082,880 acres. For satisfying this grant tracts containing the quantity granted are selected by the State authorities from the mass of the public lands in the State. By the district officers the selections are reported here, when they are entered upon our books, and where found correct on examination are submitted for the approval of the Secretary of the Interior. When approved the selections are certified by this office to the State authorities, thus conveying title to the tracts selected. During the past fiscal year selections of this class were reported to the extent of 22,047.06 acres.

By the act of July 2, 1862, and supplemental acts, Congress made a grant of land for the support of agricultural and mechanic colleges in the several States to the extent of 30,000 acres for each Senator and Representative in Congress, to which they were respectively entitled according to the apportionment of 1860, making the total quantity of

9,510,000 acres, with the prospect of the grant being extended as contemplated in the act of July 23, 1866, to the several Territories, on their being admitted as States, which, on the basis of two Senators and one Representative in Congress for each, would make an addition thereto of 990,000 acres, and raise the aggregate quantity to 10,500,000 acres. Under this grant the States which contain public land subject to sale at private entry at \$1 25 per acre, select the quantity of land to which they are entitled within their limits, and acquire title thereto in the same manner as in selections for seminaries. During the last fiscal year there were certified 243,437.70 acres of lands so selected for agricultural colleges.

To States not containing such public lands, this office issues, under the law, scrip for the quantity of land to which they are entitled, locatable, not by the States to which issued, but by their assignees, in the States and Territories containing public lands. Of such scrip there were issued during the fiscal year ending June 30, 1871, 1,110,000 acres.

After the scrip is located at the district land offices by the assignees of the States, the locations are duly returned to this office by the district land officers, entered upon our books, examined, and where found free from objection, patents are issued for the located tracts to the parties entitled. Locations of scrip of this description were returned during the last fiscal year to the extent of 335,549.10 acres.

In the several grants above referred to, there is provided for educational purposes, including common schools, universities, and agricultural colleges, a land bounty embracing the estimated aggregate of 79,506,794 acres.

#### 16.—EMIGRATION.

The emigration to the States west of the Mississippi during the last year has been unprecedented.

In Kansas and Nebraska, during fiscal year ending June 30, there were 15,367 entries made under the homestead law alone; adding that number of farms to these commonwealths, and representing a population of not less than 50,000 persons. Of these the larger portion have sought Kansas as the field of their labors. While these two States have been leaders in the progress of settlements, Minnesota and Dakota show a material increase in their productive forces, more than 16,500 persons having entered homestead and pre-emption claims in these communities during the last year. A very large proportion of these entries are made by persons from the various nations of the Old World.

With each succeeding year the tide of immigration to our shores, when not interrupted by wars of great magnitude on the European continent, has steadily increased until it now has assumed not only great proportions, but is carried on with marked system. With a view to answering the frequent inquiries made by citizens of the different European governments, a pamphlet has been prepared for distribution exclusively in Europe, giving a succinct description of our form of government, its political divisions, the peculiarities of the soil and climate, a brief statement of our public-land system, indicating how titles may be obtained under various congressional enactments, and also a synopsis of the naturalization laws, showing the steps necessary to be taken by aliens in order that they may become citizens of the United States and enjoy the privileges of native-born citizens. This pamphlet is also accompanied by a map showing the principal railroads traversing the American continent, from the Atlantic to the Pacific. In order to carry out the purposes for which this pamphlet has been prepared, it will be

necessary to have the same translated into the different European languages, and I would recommend that Congress make a sufficient appropriation to defray the expense of such translation.

The amount heretofore appropriated (\$1,500) for the translation of the annual report, will be ample, and it is proposed to make this pamphlet answer the purposes for which that was intended, believing that it can, on account of its brevity, obtain a wider circulation, and be more extensively read.

#### 17.—RAILROADS.

Continual progress has been made by the several companies to which lands have been granted to aid in the construction of railroads in the Western States, and they are rapidly drawing to completion. One of the most important of these to the nation, the Northern Pacific Railroad, which is to span the continent, has already nearly completed its road across the State of Minnesota, while the surveys for its route through Dakota, Montana, Idaho, and Washington Territories, and the State of Oregon, are being pushed with all the energy that railroad capitalists can enlist; and but a few years will elapse before another road will bind the East and West, bidding for the trade of that Eastern empire from whence has been drawn much of the wealth of Europe. Congress, alive to the importance of speedy transcontinental communication, has given an additional franchise to a southern route, passing through New Mexico, Arizona, and California, and meeting the waters of the Pacific at San Diego. When this is completed the nation will have three separate routes to the Pacific, each with an independent terminus on that ocean, affording ample facilities for the commercial interests of this and foreign countries. In the withdrawal of lands for railroad purposes, the question was raised as to the power of the Secretary to withdraw unsurveyed lands, and upon presentation of the question to the Attorney General for his views, he expressed the opinion that nothing in the act in any way limited the donation to lands already surveyed, and that unsurveyed lands could be withdrawn. Under this opinion the Department, in the case of the Atchison, Topeka and Santa Fé Railroad Company of Kansas, which was the one under consideration, directed that the unsurveyed lands along the line of its route, and within the limits of the grant, should be withdrawn. This office was in doubt as to whether this order was to be confined to the granted lands or sections in place, or whether it was to embrace also the indemnity lands; and upon submitting the question to the Department, with our views adverse to the withdrawal of unsurveyed indemnity sections, the Secretary directed the restriction of the order to the granted lands, or sections in place, and the withdrawal has been so ordered. In subsequent withdrawals, under other acts, where the donation is not limited to surveyed lands, the same rule has been applied, and the unsurveyed lands withdrawn.

#### 18.—CHIPPEWA INDIAN SCRIP.

Information having reached the Department that much of this scrip issued in late years had been obtained through fraudulent representation, the Secretary directed that the patenting of any locations made with it should be suspended until the matter could be investigated. This order has been carried into effect, and all cases are now suspended until the interdict is removed.



## 19.—SIXTEENTH AND THIRTY-SIXTH SECTIONS.

The States of Wisconsin and Minnesota presented to this office arguments in favor of their claims to the sixteenth and thirty-sixth sections in Indian reservations, or equivalents therefor. In reply, it was held that only the sixteenth and thirty-sixth sections of the public lands, or where they were disposed of, equivalents therefor, were granted to said States by their organic acts; and hence, that any such sections embraced in Indian reservations at the date of said acts were not public lands, and consequently were not granted, nor were the States entitled to equivalents therefor. The claims are now adjusted on this basis.

## 20.—SWAMP AND OVERFLOWED LANDS.

The acts of Congress relating to the granting of swamp and overflowed lands to the various States, are: The act approved March 2, 1849, which, for the purposes of reclaiming that class of lands, and of aiding in the construction of levees, granted the swamp and overflowed lands in the State of Louisiana, with certain specified exceptions, to that State. 2. The act of September 28, 1850, extends the grant to all States then in the Union, and enlarged the same so as to cover the exceptions contained in the grant of 1849 to Louisiana. 3. The act of March 12, 1860, which extends the provisions of the grant to the States of Minnesota and Oregon, and modifies the act of 1850, by limiting the time in all of the States in which the selection of lands under the swamp-grant may be made.

As will be seen by the tabular statements elsewhere given, there have been made during the fiscal year selections amounting to 556,475 acres; within the same period there have been approved by the Secretary, lists submitted by this office embracing 428,597.01 acres. There have, also, been 1,168,837.37 acres finally transferred by patent to the States entitled thereto.

In view of the fact that my predecessors have so often called attention to the matter, I deem it only necessary to state, in support of a recommendation that this grant be no further enlarged, that it has attained proportions far in excess of what was the original intent of its projectors, and in its operations has embraced selections amounting to 61,071,356.03 acres, of which 46,276,912.17 acres have been formally conveyed to the States claiming the same.

Under the swamp indemnity act of March 2, 1855, extended by act of March 3, 1857, to that date, no adjustments have been made during the present year. In view of the ruling made by the Department, June 21, 1870, relative to the character of proof required in applications for swamp indemnity, the States have declined to present their claims until the whole question shall have undergone a rehearing.

## 21.—SPANISH AND MEXICAN TITLES.

By the treaty of peace, friendship, limits, and settlement, with the republic of Mexico, concluded at Guadalupe Hidalgo, on the 2d day of February, 1848, as ratified May 30, and proclaimed July 4, 1848, known as the treaty of Guadalupe Hidalgo, and by the subsequent treaty concluded with the same power on the 30th day of December, A. D. 1853, and proclaimed June 30, 1854, commonly known as the Gadsden purchase, the United States acquired jurisdiction of the region now embraced in the States of California and Nevada, and part of the State of

Kansas; also a part of the Territories of New Mexico, Arizona, and Colorado, and nearly all of the Territory of Utah.

As usual in making treaties, clauses were inserted recognizing the rights of property, and guaranteeing their maintenance. The eighth and ninth articles of the treaty of Guadalupe Hidalgo provide as follows:

ARTICLE VIII. Mexicans now established in territories previously belonging to Mexico, and which remain for the future within the limits of the United States, as defined by the present treaty, shall be free to continue where they now reside, or to remove at any time to the Mexican republic, retaining the property which they possess in the said territories, or disposing thereof, and removing the proceeds wherever they please, without their being subjected, on this account, to any contribution, tax, or charge whatever. Those who shall prefer to remain in the said territories may either retain the title and rights of Mexican citizens, or acquire those of citizens of the United States. But they shall be under the obligation to make their election within one year from the date of the exchange of ratification of this treaty; and those who shall remain in the said territories after the expiration of that year, without having declared their intention to retain the character of Mexicans, shall be considered to have elected to become citizens of the United States. In the said territories property of every kind, now belonging to Mexicans not established there, shall be inviolably respected. The present owners, the heirs of these, and all Mexicans who may hereafter acquire said property by contract, shall enjoy, with respect to it, guarantees equally ample as if the same belonged to citizens of the United States.

ARTICLE IX. Mexicans, who in the territories aforesaid shall not preserve the character of citizens of the Mexican republic conformably with what is stipulated in the preceding article, shall be incorporated into the Union of the United States and be admitted at the proper time (to be judged of by the Congress of the United States) to the enjoyment of all the rights of citizens of the United States, according to the principles of the Constitution, and in the mean time shall be maintained and protected in the free enjoyment of their liberty and property, and secured in the free exercise of their religion without restriction.

*Legislation and rulings in regard to Mexican and Spanish land-grants in California.*

In order to render effective the provisions of the treaty of Guadalupe Hidalgo respecting land-titles in California, and with a view to separate the private from the public lands, Congress, by the act approved March 3, 1851, (Stats., vol. 9, p. 631,) entitled "An act to ascertain and settle the private land claims in the State of California," constituted a commission, consisting of three commissioners, to be appointed by the President, by and with the advice and consent of the Senate, which commission was to continue for three years from the date of said act, unless sooner discontinued by the President. This act was continued in force until March 3, 1856, by the two supplemental acts of 18th January, 1854, (vol. 10, p. 265,) and 10th January, 1855, (vol. 10, p. 603.) Under those laws full and ample opportunity was afforded to every person interested in Spanish or Mexican land-grants to present their claims for adjustment, with the most liberal provisions to enable them to present such testimony in support of their claims as they might desire. Each and every person claiming lands in California by virtue of any rights or title derived from the Spanish or Mexican government was authorized to present his or her claim to the commissioners, together with such documentary evidence and testimony of witnesses as they relied upon to establish their claims, and it was made the duty of the commissioners to examine the same upon such evidence, and upon the evidence produced in behalf of the United States, and to decide upon the validity of such claims, being governed by the treaty of Guadalupe Hidalgo, the law of nations, the laws, usages, and customs of the government from which the claim was derived, the principles of equity, and the decisions

of the Supreme Court of the United States, so far as they might be applicable. And to insure the most careful and thorough examination possible, the Congress of the United States, by the twelfth section of the act approved 31st August, A. D. 1852, (vol. 10, p. 99,) provided that in every case in which the board of commissioners on private land claims in California should render a final decision, it should be their duty to have two certified transcripts prepared of their proceedings and decisions and of the papers and evidence on which the same were founded, one of which transcripts was required to be filed with the clerk of the proper district court, and the other to be transmitted to the Attorney General of the United States, and the filing of such transcripts operated *ipso facto* as an appeal for the party against whom the decision was rendered, and if the decision was adverse to the private claimant it was made his duty to file with the clerk of said court within six months after the rendition of such decree a notice of his intention to prosecute the appeal; and if the decision was against the United States, it was made the duty of the Attorney General, within six months after receiving said transcript, to cause a notice to be filed with said clerk that appeal would be prosecuted by the United States, and on failure of either party to file such notice, the appeal was to be regarded as dismissed, which rendered the proceedings upon the title final. In the event, however, of prosecution of appeal by the claimant or the United States, the judgment of the district court could be taken by appeal to the Supreme Court of the United States, the law thus furnishing to parties interested the fullest opportunity to have their titles passed upon by the highest judicial tribunal. Upon the final confirmation of title, the next proceeding was to have the private claim segregated by survey from the public lands, or from other contiguous private grants. To this end, the thirteenth section of the act of 3d March, 1851, made it the duty of the surveyor general of California to cause all private claims to be accurately surveyed, and to furnish plats of the same, upon the presentation of which plat duly certified and approved by the surveyor general, together with an authentic certificate of confirmation, to the General Land Office, a patent was to be issued, which was to be conclusive between the United States and the claimants, but should not affect the interests of third persons. The same section of said act (section 13, act 3d March, 1851,) provided that "in the location of said claims, the said surveyor general shall have the same power and authority as are conferred on the register of the land office and receiver of the public moneys of Louisiana, by the sixth section of the act 'to create the office of surveyor general of the public lands for the State of Louisiana,' approved 3d March, one thousand eight hundred and thirty-one." (U. S. Stats., vol. 4, p. 492.)

In the discharge of his duties under this law, the surveyor general met with a number of difficulties upon various points, which were from time to time the subject of inquiry by him, and instructions by this office for his guidance. Some of the earlier of these instructions, which are still in force, are herewith presented, as follows:

GENERAL LAND OFFICE, November 28, 1855.

JOHN C. HAYS, Esq.,  
Surveyor General of California.

SIR: In reference to certain questions and difficulties, orally suggested by you at this office, respecting the survey of "private land claims in California," the following is presented for your information and government. \* \* \* Now you will observe that the surveyor general has no power to execute and approve an official survey of any claim until it shall have been "*finally confirmed*" pursuant to the aforesaid act of 3d March, 1851.

3d. In the survey of finally confirmed claims, you must be strictly governed by the



decree of confirmation; and where the terms of such decree are specific they must be exactly observed in fixing the locality of and surveying the claim.

4th. Where the record and decree of final confirmation fix the area claimed—thus, for example, four “sitios de ganado mayor,” or square leagues, and the figurative plan, or map delineative of the limits, gives a surface much larger than the area confirmed, the location is to be taken *within that surface*, in a compact form, according to the lines of the public surveys, at the election of the confirmer as to the precise locality, but in such a manner, whenever practicable, as not to interfere with any adverse claim. Where this is not practicable consistently with the calls of the confirmation, the law is explicit as to the proceedings for the settlement of the conflict.

5th. In any case of this class the surveyor general should make a formal demand upon the confirmer to give, *in writing*, a specific designation of the locality he may elect within the extended limits indicated by the plat in the record, and a period should be fixed within which he should be required to make his election. In default of compliance, it will be the duty of the surveyor general to exercise his sound judgment in fixing the location, having due regard to the rights of the confirmer and in conformity to the record.

6th. Where a grant is for, say, four sitios with the words “*poco mas o menos*,” (a little more or less,) the meaning is plain that you are to be governed by the area confirmed; but if in running out the lines of the confirmed claim there is a little more or less than the fixed quantity, it is to be considered as not in any manner affecting the validity of the survey, upon the common-law principle that the law takes no heed of small matters.

7th. In regard to claims which have been confirmed by the board of land commissioners, or by the United States district court, but pending an appeal, the question is presented—What action is the surveyor general to have in regard to them? If not within the range of his regular surveying operations, he is not called upon to take any action whatever, but must let cases of that class remain until a final decree shall have been rendered—then if such final decree is one of confirmation, your line of duty is already indicated—if one of rejection, the lines of the public surveys are to be extended over such rejections, without any regard to their alleged locality.

8th. If, however, in the gradual progress of the public surveys, the surveyor general approaches the location of a claim not finally confirmed, but which has been acted upon by either the board of land commissioners or the United States district court, and is still pending on appeal, it will be his duty where the exterior lines of such claim are clearly defined—

8th<sup>a</sup>. To close the lines of the public surveys *on or near its exteriors by legal subdivisions* at such points, either within or without the lines of such claim, as will most nearly approximate its alleged boundaries; but where the boundaries are not clearly defined, a similar course of proceeding should be taken as indicated under the 5th head in the foregoing. The lands covered by claims of this class are to be distinctly designated on the township plats by dotted lines or shading, and special reference to and designation of the claim by its number and date. The action had upon it by the land board, or the courts, should also appear on the face of the plat. The lands thus designated will be held in reserve, as covered by unconfirmed claims, until a decree shall have been rendered either of confirmation or rejection. \* \* \* \*

9th. That if, in extending the Government surveys, you approach a Spanish or Mexican grant, confirmed by the board of land commissioners, of which a navigable creek or river is a natural boundary, such creek or river may be meandered at the expense of the Government when necessary to close upon it the lines of the adjacent public surveys; but where not navigable, you will treat such stream merely as a distinctive boundary, not to be meandered, but to be dealt with as an exterior, and as indicated under the head 8th<sup>a</sup> in the foregoing.

10th. In cases of claims *rejected* by the board, and in which no appeal is taken within the period stipulated in section 12, act of 31st August, 1852, they are to be treated as public lands, and the lines of the surveys extended over them.

GENERAL LAND OFFICE, May 18, 1857.

JOHN C. HAYS, Esq.,  
Surveyor General, San Francisco, California.

SIR: By the last mail I received your letter of the 20th ultimo, representing your doubts “incident to the final survey of confirmed private land claims” as attended with much difficulty, and desiring instruction on the matters, in which you submit the following: “In several cases two, and sometimes three confirmations have been finally made for the same identical land.

“In very many cases they overlap so much that compromises cannot and will not be made or effected by the parties.”

By the thirteenth section of the act 3d March, 1851, (U. S. Stats., vol. 9, page 633,) it is made the duty of the surveyor general “to cause all private claims which shall be finally confirmed to be accurately surveyed, and furnish plats of the same,” and

"in the location of the said claims" it confers the "same power and authority" on the surveyor general as the register and receiver have by the sixth section of the act of 3d March, 1831, (see 4th vol. U. S. Stats., page 494,) which is as follows:

"Sec. 6. *And be it further enacted*, That in relation to all such confirmed claims as may conflict, or in any manner interfere with each other, the register of the land office and receiver of public moneys for the proper land district are hereby authorized to decide between the parties, and shall, in their decisions, be governed by such conditional lines or boundaries as have been or may be agreed upon between the parties interested, either verbally or in writing; and in case no lines or boundaries be agreed upon between the parties interested, then the said register and receiver are hereby authorized to decide between the parties in such manner as may be consistent with the principles of justice; and it shall be the duty of the surveyor general of the said State to have those claims surveyed and platted in accordance with the decisions of the register and receiver."

Now, the thirteenth section of the act of 3d March, 1851, merely strikes out register and receiver, and substitutes surveyor general, in matters of conflict in California. You have, then, the power which is delegated to you respecting California claims very plainly pointed out and defined in the statute as above quoted. Whenever, therefore, you have before you for survey claims which conflict, you will, before proceeding to field operations, make a call in writing upon the several claimants to file with you an authentic showing of the "conditional lines or boundaries" which may have been or may be agreed upon between them. You will fix the period for a reply, affording a reasonable time, and in default of the desired showing you will, in virtue of the authority expressly delegated to you by the statute, "decide between the parties in such a manner as may be consistent with the principles of justice;" you will then cause a return of survey to be made, exhibiting on the plat of survey, therewith connected by black lines, the exact limits, according to the final decree of confirmation, and in red ink, the conditional lines where agreed upon, or in default of such conditional lines, those lines which you shall adjudge to be those of the survey of the tract, which shall be carried into patent, in the words and figures of the field-notes, which must accompany the finally approved survey. In any case where a survey under a decree of final confirmation shall fall wholly within the limits of another, the grade of title and date of confirmation will, as a matter of course, be the essential data in determining as to which will take precedence, but in any case of that character you should make a full report of all the facts, with illustrative diagrams and your own decision thereon, notifying the claimants of its purport, and then await the ultimate decision of the Department.

Previous to 2d June, 1862, the surveys of private land claims were paid for by the United States, but an act of that date was passed entitled "An act for the survey of grants or claims of land," by which it is provided as follows:

That all claims or grants of land in any of the States or Territories of the United States, derived from any foreign country or government, shall be surveyed under the direction of the proper officers of the Government of the United States, upon the application of the parties claiming or owning the same, and at their expense, which shall be paid or secured to the satisfaction of the Secretary of the Interior before the work shall be performed; but nothing in the law requiring the executive officers to survey land claimed or granted under any laws of the United States shall be construed either to authorize such officers to pass upon the validity of the titles granted by or under such laws, or to give any greater effect to the surveys made by them than to make such surveys *prima facie* evidence of the true location of the land claimed or granted, nor shall any such grant be deemed incomplete for the want of a survey or patent, when the land granted may be ascertained without a survey or patent.—(Stats., vol. 12, p. 410.)

This act was repealed by the act approved February 18, 1871, (vol. 16, p. 416,) but with the proviso "that the repeal of said act shall not affect any rights heretofore acquired under the same." Another law however, which stands unrepealed, (the act of May 30, 1862, Stats., vol. 12, page 409, sec. 3,) provides that "an accurate account shall be kept by each surveyor general of the cost of surveying and platting private land claims, to be reported to the General Land Office, with the map of such claim, and that patents shall not issue for any such private claim until the cost of survey and platting shall have been paid into the Treasury of the United States by the claimant;" and the sixth section of the act of July 1, 1864, (Stats., vol. 13, page 332,) provides that

"each claimant requesting a survey and plat shall first deposit in the district court of the district within which the land is situated a sufficient sum of money to pay the expense of such survey and plat and of the publication required by the first section of this act," so that payment of survey by the claimant of any private land claim is still a requisite of the law. In view of the guarantees of the treaty of Guadalupe Hidalgo to protect and maintain the Mexicans incorporated into the Union of the United States in the "free enjoyment of their liberty and property," with the privilege of "retaining the property which they possess in the" territory acquired by that treaty, "or disposing thereof and removing the proceeds wherever they please, without their being subjected on this account to *any contribution, tax, or charge whatever,*" and in view of the further fact that it is quite as essential to the Government as to the individual that a separation of the private from the public lands should be made, it is suggested that all the provisions of existing laws which require payment to be made by the claimant for the survey and platting of private land claims under treaties with foreign governments should also be repealed.

Surveys under the act of March 3, 1851, were subject to the jurisdiction and control of the Commissioner of the General Land Office, subordinate to the Secretary of the Interior. The surveyor general caused the surveys to be executed. If deemed correct he approved them, and if found satisfactory to this office patents were issued. If excepted to by the parties interested, the case came by appeal, first to this office, and finally before the Secretary of the Interior, whose judgment was final.

By the act of Congress approved June 14, 1860, (U. S. Stats., vol. 12, page 33,) jurisdiction was given to the Federal judiciary upon surveys approved by the surveyor general subsequent to its passage. The act provided that whenever the surveyor general of California should, in compliance with the thirteenth section of the act of March 3, 1851, "have caused any private land claim to be surveyed and a plat to be made thereof, he shall give notice that the same has been done and the survey and plat approved by him, by a publication once a week for four weeks in two newspapers, one published in the city of San Francisco, and one of which the place of publication is nearest the land, if the land is situated in the northern district of California; and once a week for four weeks in two newspapers, one published at Los Angeles, and one of which the place of publication is nearest the land, if the land is situated in the southern district of California; and until the expiration of such time, the survey and plat shall be retained in his office subject to inspection." Said act further provided that surveys so made could be brought before the Federal judiciary either by the claimants, upon application by them in the manner prescribed by the statute and under an order of court, or by the United States on motion of the district attorney, founded on sufficient affidavits, and the United States courts had authority finally to adjudicate questions of survey.

The fifth section of said act provided "that when, after publication as aforesaid, no application shall be made to the said court for the said order, or when said order has been refused, or when an order shall have been obtained as aforesaid, and when the district court by its decree shall have finally approved said survey and location, or shall have reformed or modified the same and determined the true location of the claim, it shall be the duty of the surveyor general to transmit, without delay, the plat or survey of the said claim to the General Land Office, and the patent for the land as surveyed shall forthwith be issued



therefor, and no appeal shall be allowed from the order or decree as aforesaid of the said district court, unless applied for within six months from the date of the decree of said district courts, but not afterwards, and the said plat and survey so finally determined by publication, order, or decree, as the case may be, shall have the same effect and validity in law as if a patent for the land so surveyed had been issued by the United States." Surveys under this act, therefore, became final either by publication without objection, by order or decree of the United States district court, or by the adjudication of the Supreme Court of the United States.

In the sixth section of the act of June 14, 1860, it was enacted that all surveys and locations theretofore "made and approved by the surveyor general of California which" had at the date of the act "been returned into the said district courts, or either of them, or in which proceedings" were then "pending for the purpose of contesting or reforming the same," were thereby "made subject to the provisions of" said "act, except that in the cases so returned or pending no publication" should "be necessary on the part of the surveyor general."

Under a construction placed upon the sixth section by the judges of the United States district courts for California, those judicial officers, in orders issued in August and September, 1860, directed the surveyor general to publish "all plats of official surveys made and approved by him under the act of March 3, 1851, which up to" the time of said orders he had "not been notified by the Department at Washington of the issuance of patents thereon."

At the December term, 1863, of the United States Supreme Court, the question was presented in the case of the United States *vs.* Sepulveda, (1 Wallace, p. 104,) as to what class of surveys was properly under the jurisdiction of the United States district courts of California. In that case the decree of the board of land commissioners, under the act of March 3, 1851, had become final by an order of the district court dismissing appeal, and directing that the claimants have leave to proceed upon the decree of the land commissioners as under a final decree. The survey of the tract was approved by the surveyor general in 1859, and in 1860 the district court ordered the surveyor general to return a plat of said survey into court.

Mr. Justice Field, in announcing the opinion of the United States Supreme Court, held as follows:

The jurisdiction of the district court to supervise and correct the action of the surveyor general in this case is not derived from the act of June 14, 1860. That act applies to surveys subsequently made, with certain exceptions, within which the present case does not fall. The exceptions embrace only those surveys previously made and approved by the surveyor general, which had been, at the passage of the act, returned into the district courts, or in relation to which proceedings were then pending for the purpose of contesting or reforming the same. The jurisdiction is asserted independent of the act of 1860, upon the authority of the decision of this court in the case of the United States *vs.* Fossatt, (21 Howard, p. 445.) In that case the decree had been rendered by the district court, and it was held that the jurisdiction of the court extended not merely to the determination of questions relating to the genuineness and authenticity of the grant presented, and its efficacy in transferring the title, but also to questions relating to its location and boundaries; and that for the settlement of these latter questions the power of the court over the case did not terminate until the issue of the patent conformably to its decree.

Previous to the act of 1860, the jurisdiction of the board and of the district court, on appeal, was derived entirely from the act of March 3, 1851, and the act of August 31, 1852; and when the claims presented were adjudged valid and confirmed, the duty devolved upon the surveyor general to cause them to be surveyed. "For all claims finally confirmed," says the statute, "by the said commissioners, or by the said district or Supreme Court, a patent shall issue to the claimant upon his presenting to the General Land Office an authentic certificate of such confirmation, and a plat or survey

of the said land, duly certified and approved by the surveyor general of California, whose duty it shall be to cause all private claims which shall be finally confirmed to be accurately surveyed, and to furnish plats of the same." The action of the surveyor in this respect was not in terms made subject to the control of the board or court; it was only made returnable to the Commissioner of the General Land Office at Washington, who was invested, by the previous legislation of Congress, with a general supervision over the acts of subordinate officers charged with making surveys. Whatever jurisdiction the district court may have possessed to enforce the execution by the surveyor general of its own decrees, it possessed no control over the execution of the decrees of the board.

It is true that for the determination of the validity of the claims presented, some consideration must have been had of their extent, location, and boundaries. The petitions of the claimants must necessarily have designated, with more or less precision, such extent and location. And where the grants were by metes and bounds, or where proceedings before Mexican authorities, such as took place upon a judicial delivery of possession, had established the boundaries, or where from any other source pending the proceedings for a confirmation the boundaries were indicated, it was proper for the board to declare them in its decrees. And such was the course adopted in numerous instances. But in the majority of cases the grants of the Mexican governors were for a certain specified quantity of land lying within exterior boundaries embracing a much larger tract, and in relation to which no proceedings were ever taken by the former government for its measurement and segregation. In such cases, a confirmation of the claim was only a judicial determination of the right of the claimant to have a specific quantity set apart to him out of a general tract. And the duty of the board was discharged by a confirmation of the claim in the general terms of the grant, leaving the specific quantity designated to be surveyed and laid off by the proper officers of the Government, to whom the subject of surveys was intrusted. With the surveys following the decrees of the board the district court had nothing to do. The surveys of confirmed Mexican grants, particularly when they are for quantities lying within exterior boundaries embracing larger tracts, involve the consideration of various matters not properly the subject of judicial inquiry. In numerous instances, the location of the quantity confirmed, whether it shall be on one or the other side of the general tract, may depend upon the past or intended action of the Government with reference to the surplus. Portions of the general tract may be required, and, therefore, be properly reserved from the location, for public purposes. The act of 1860 creates a new jurisdiction in the court, which cannot be assumed independent of the act, and under it should be exercised only in cases coming clearly within its language.

The decree of the district court revising the action of the surveyor general and correcting his survey, must, therefore, be reversed, and the court directed to dismiss the proceedings for want of jurisdiction. If the survey does not conform to the decree of the board the remedy must be sought from the Commissioner of the General Land Office before the patent issues, and not in the district court.

Under these two laws, therefore, three classes of surveys were created:

1st. Such as had been approved by the surveyor general *prior* to the act of June 14, 1860, which had not, at the passage of that act, been returned into the district court, or in relation to which proceedings were not then pending for the purpose of contesting or reforming the same. Questions relating to such surveys were determinable "by the proper officers of the Government to whom the subject of surveys was intrusted," the Secretary of the Interior, the Commissioner of the General Land Office, and the surveyor general.

2d. Surveys in relation to which proceedings were pending at the date of the passage of the act of June 14, 1860, for the purpose of contesting or reforming the same, and which afterward became final by direct action of the judiciary, or were finally rejected by them.

3d. Surveys which became final by publication under said act.

The duties of this office in regard to confirmed surveys of the two classes last named are merely ministerial, consisting of the preparation of patents upon the presentation of the requisite proofs to show finality of judicial proceedings, or finality of the survey by publication.

*The act of 1st July, 1864.—(U. S. Stats., vol. 13, p. 332.)*

The next act of Congress in relation to private land claims in California is that approved July 1, 1864, entitled "An act to expedite the set-

tlement of titles to lands in the State of California," the effect of which is to remove from the jurisdiction of the courts surveys subsequently made and approved by the surveyor general, and giving them a status in regard to adjustment similar to that of the act of March 3, 1851. The first section of the act provided "that whenever the surveyor general of California shall, in compliance with the thirteenth section of an act entitled 'An act to ascertain and settle the private land claims in the State of California,' approved March 3, 1851, have caused any private land claim to be surveyed and a plat to be made thereof, he shall give notice that the same has been done by a publication, once a week for four consecutive weeks, in two newspapers, one published in the city of San Francisco and one published near the land surveyed, and shall retain in his office for public inspection the survey and plat until ninety days from the date of the first publication in San Francisco shall have expired; and if no objections are made to said survey, he shall approve the same, and transmit a copy of the survey and plat thereof to the Commissioner of the General Land Office, at Washington, for his examination and approval; but if objections are made to said survey within the said ninety days, by any party claiming to have an interest in the tract embraced by the survey, or in any part thereof, such objections shall be reduced to writing, stating distinctly the interest of the objector, and signed by him or his attorney, and filed with the surveyor general, together with such affidavits or other proofs as he may produce in support of the objections. At the expiration of said ninety days the surveyor general shall transmit to the Commissioner of the General Land Office at Washington a copy of the survey and plat, and objections, and proofs filed with him in support of the objections, and also of any proofs produced by the claimant and filed with him in support of the survey, together with his opinion thereon; and if the survey and plat are approved by the said Commissioner he shall indorse thereon a certificate of his approval. If disapproved by him, or if, in his opinion, the ends of justice would be subserved thereby, he may require a further report from the surveyor general of California touching the matters indicated by him, or proofs to be taken thereon, or may direct a new survey and plat to be made. Whenever the objections are disposed of or the survey and plat are corrected, or a new survey and plat are made in conformity with his directions, he shall indorse upon the survey and plat adopted his certificate of approval. After the survey and plat have been, as hereinbefore provided, approved by the Commissioner of the General Land Office, it shall be the duty of the said Commissioner to cause a patent to issue to the claimant, as soon as practicable after such approval." And the second section of said act provides as follows: "That the provisions of the preceding section shall apply to all surveys and plats by the surveyor general of California heretofore made, which have not already been approved by one of the district courts of the United States for California, or by the Commissioner of the General Land Office: *Provided*, That where proceedings for the correction or confirmation of a survey are pending on the passage of this act in one of the said district courts, it shall be lawful for such district court to proceed and complete its examination and determination of the matter, and its decree thereon shall be subject to appeal to the circuit court of the United States for the district, in like manner, and with like effect, as hereafter provided for appeals in other cases to the circuit court; and such appeals may be in like manner disposed of by said circuit court."

The second section made the provisions of the first applicable to all surveys and plats theretofore made by the surveyor general of California



which had not at the date of said act been approved by one of the district courts of the United States for California, or by this office, and provided that where proceedings for the correction or confirmation of a survey were pending in the district court at the date of said act, such judicial examination and determination could be completed, but the decree of the district court in such cases was made appealable to the circuit court of the United States for the district instead of to the United States Supreme Court, as in the case of surveys under act of June 14, 1860, and the circuit court was authorized to dispose of such appeals.

The third section of the act relieved the United States Supreme Court of the jurisdiction upon survey in all cases where appeal from the decree of the district court had not been taken at the date of the passage of the act, and conferred the jurisdiction theretofore exercised by the United States Supreme Court in such cases upon the circuit court of the United States for California, which was authorized fully to determine the matter.

The circuit court has power "to affirm, or reverse, or modify the action of the district court, or order the case back to the surveyor general for a new survey;" but "when the case is ordered back for a new survey, the subsequent survey of the surveyor general shall be under the supervision of the Commissioner of the General Land Office, and not of the district or circuit court of the United States."

In quite a number of cases surveys had been made and approved by the surveyor general prior to the act of June 14, 1860, and in relation to which proceedings were not then pending in court, but which under the orders of the district courts before mentioned were, subsequent to that act, advertised in supposed conformity with the provisions thereof. In accordance with the principles enunciated in the aforesaid decision of the United States Supreme Court in the case of the United States *vs.* Sepulveda, the provisions of the act of June 14, 1860, were not applicable to such surveys, and publication thereof was not authorized by law, nor had the United States district courts jurisdiction upon them, but they remained where the act of March 3, 1851, left them, under the supervision of the Commissioner of the General Land Office; and therefore, in virtue of the statutory enactment in the second section of the act of July 1, 1864, that "the provisions of the preceding section shall apply to all surveys and plats by the surveyor general of California heretofore made, which have not already been approved by one of the district courts of the United States for California, or by the Commissioner of the General Land Office," surveys of this kind require publication for four weeks, and retention in the office of the surveyor general for ninety days, even should publication of the same have been made under the orders of the United States district courts subsequent to the act of June 14, 1860, and before the act of July 1, 1864.

The sixth section of the act points out the course to be pursued by claimants to procure surveys of confirmed claims as follows:

That it shall be the duty of the surveyor general of California to cause all private land claims finally confirmed to be accurately surveyed, and plats thereof to be made, whenever requested by the claimants: *Provided*, That each claimant requesting a survey and plat shall first deposit in the district court of the district within which the land is situated, a sufficient sum of money to pay the expenses of such survey and plat, and of the publication required by the first section of this act. Whenever the survey and plat requested shall have been completed and forwarded to the Commissioner of the General Land Office, as required by this act, the district court may direct the application of the money deposited, or so much thereof as may be necessary, to the payment of the expense of said survey and publication.

The seventh section makes it "the duty of the surveyor general of California, in making surveys of the private land claims finally confirmed, to follow the *decree of confirmation* as closely as practicable whenever such decree designates the specific boundaries of the claim. But when such decree designates only the out-boundaries within which the quantity confirmed is to be taken, the location of such quantity shall be made, as near as practicable, in one tract and in a compact form. And if the character of the land, or intervening grants, be such as to render the location impracticable in one tract, then each separate location shall be made, as near as practicable, in a compact form." The same section makes it the duty of the Commissioner of the General Land Office "to require a substantial compliance with the directions of this section before approving any survey and plat forwarded to him."

*Act of July 23, 1866, "to quiet land-titles in California."*—(*U. S. Stats., vol. 14, page 218.*)

The seventh, eighth, and ninth sections of this act relate to claims derived from the former governments of Spain or Mexico; and as showing the requirements of this law and official regulations thereunder, extracts from the instructions and rulings communicated to the local land officers in California are herewith submitted, as follows:

DEPARTMENT OF THE INTERIOR,  
*General Land Office, September 13, 1866.*

GENTLEMEN: Annexed is an act of Congress approved July 23, 1866, "to quiet land-titles in California."

Section 7 allows persons who purchased in good faith and for valuable consideration lands of Mexican grantees where the grants have been rejected, or where the lands so purchased have been excluded from the final survey of such grant, to purchase the same from the United States, after the survey of such lands under existing laws, at the minimum price established by law, upon making satisfactory proof before the register and receiver as to their original purchase before mentioned, and that they have used, improved, and continued in actual possession of the same, provided that no valid adverse right or title exist to the same, and provided further, that the right above mentioned shall not extend to lands in the city or county of San Francisco, nor to lands containing mines of gold, silver, copper, or cinnabar.

If it shall be made to appear, by showing from the above class of claimants, that injury would result to permanent improvements from running the lines of public surveys through such improvements, the Commissioner of the General Land Office is authorized to recognize existing lines of subdivisions.

In adjudicating and reporting upon any claims coming within this provision, you will take care, in all cases, to obtain from the surveyor general a connected plat exhibiting the exact out-boundaries of such rejected claim, so that when the cases come up for revision at the Department the fact may clearly appear in every case that the tracts claimed are within the actual limits of such rejected claim.

The ninth and last section makes provision for appeals from decrees of United States district to the circuit court, in reference to Spanish or Mexican grants, rendered after the 1st day of July, 1865, as provided for by section three of the act of July 1, 1864—provisions you will, of course, take notice of in acting upon any matter connected with such interests; yet the stipulations there made are to be more immediately kept in view by the United States surveyor general in acting upon such cases in regard to applications for the return of surveys as the basis of patents.

A copy of these instructions will be sent to the surveyor general.

Very respectfully, your obedient servant,

JOS. S. WILSON,  
*Commissioner.*

REGISTER AND RECEIVER,  
*San Francisco, California.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, November 2, 1868.*

GENTLEMEN: \* \* \* \* \* By our letter of 15th September last, in the case of the claim of Juan M. Luco, esq., you were instructed upon the filing in your

office by the United States surveyor general of the proper plats, to notify said Luco that his application would be received, and steps taken with a view to appointing a time and place of hearing, upon proper public notice to all adverse claimants under the laws of the United States.

In reply to your inquiry as to the nature and character of the applications to be filed under the seventh section of the act of July 23, 1866, before such hearings were to be ordered, I have to state that it will be necessary for claimants to file with you a sworn statement descriptive of the tracts claimed, and setting forth that they have purchased the same in good faith, and for a valuable consideration, of Mexican grantees or assigns, which grants have subsequently been rejected, or that said tracts have been excluded from the final survey of such grants; also, that they have continued in the actual possession of the same, as according to the lines of their original purchase, and *have used and improved the same*, and that no valid adverse right or title, except that of the United States exists thereto.

By the provisions of the act of March 3, 1853, (ch. 143, vol. 10, p. 244, United States Stats.,) the lands within the limits of the Rancho Ulpinos claim became subject to the laws of the United States for the disposal of the public domain, upon the rejection of said claim by the United States Supreme Court; therefore, all valid claims arising under laws of the United States, and having inception by settlement entry, withdrawal for railroad purposes, or selections under grants to the State of California prior to the date of the passage of the act of July 23, 1866, are protected as against claims arising under the seventh section of said act.

Upon application being presented to you as herein required, under said act, you will require that ample notice be given by personal service where practicable, upon all adverse claimants, of the time and place of hearing, and also by publication at the expense of the applicants, in a newspaper of general circulation in the locality wherein the tracts claimed are situated, for at least thirty days prior to the date of hearing, in order that pre-emption and homestead claimants may have ample opportunity to present testimony in support of their claims, adverse to that of claimants under the seventh section of the act referred to. You will please notify Mr. Luco of the requirements herein set forth.

Very respectfully, your obedient servant,

JOS. S. WILSON,  
*Commissioner.*

REGISTER AND RECEIVER,  
*San Francisco, California.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, March 18, 1870.*

GENTLEMEN: In reply to register's letter of 11th ultimo, I inclose herewith a copy of instructions to the district office at San Francisco, dated September 13, 1866, under the act of July 23, 1866, "to quiet land titles in California."

As an indication of what is required as to the nature and character of applications under the seventh section of the act, I also inclose an extract from our instructions of November 2, 1863, to same office, in the matter of the application of Juan M. Luco, to file upon the rejected "Ulpinos claim." This will be found to embody the general requirements under said seventh section so far as respects individual claimants.

As respects "coterminous proprietors," whose right of "joint entry" is admissible in certain cases, under the act of 1866, I have to state that the proofs must be made separately, and individually, as in other claims, and the question of "coterminous proprietorship" is one of fact, to be drawn from the nature and character of the respective claims, which, when clearly determined by the register and receiver, will serve as a basis for your action, admitting the joint entry when the showing is clear, and rejecting it when the respective rights of the claimants can be separately adjusted and secured. In all cases a full report of your action is desired.

Very respectfully,

JOS. S. WILSON,  
*Commissioner.*

REGISTER AND RECEIVER,  
*Los Angeles, California.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, September 13, 1866.*

SIR: I have to draw your special attention to the provisions of the eighth and ninth sections of the act of Congress approved July 23, 1866, a copy of which accompanies other instructions to you of this date.

The eighth section contemplates two classes of cases, viz:

1st. Claims derived from Spanish or Mexican authorities which were finally confirmed at the passage of the act of July 23, 1866.



2d. Claims of the same kind which may be confirmed after the passage of the act.

Where parties may present their applications within ten months from the date of said act of July 23, 1866, for survey and plat in cases heretofore finally confirmed, you will of course cause the same to be duly surveyed according to the sixth and seventh sections of the act of July 1, 1864, (Stats., vol. 13, p. 334.) And so in like manner you will deal with such finally confirmed claims when application may be made within ten months next succeeding the act of final confirmation, and in either class of cases make the approved returns of survey which are required by law as the bases of patents.

When, however, in any case falling within the above-mentioned classes the requisite application is not made within the period of limitation fixed in this statute, the law makes it your duty, thereafter, to extend the lines of the public surveys over such claims, and to "set off in full satisfaction of such grants, and according to the lines of the public surveys, the quantity of land confirmed in such final decree, and as nearly as can be done in accordance with such decree," taking care to observe the provision in this section as to non-interference "with the right of *bona fide* pre-emption claimants."

You will immediately ascertain in what claims of the first class surveys have not been applied for, and cause notice to be promptly served upon the parties interested, of the requirements of the law, which it is your duty to carry out. And in like manner you will timely bring to the notice of parties where claims may hereafter be finally confirmed, the stipulation of the statute fixing a limitation as to time within which confirmees must apply for a specific survey, in default whereof the location must be adjusted according to the lines of the public surveys.

The ninth section provides for appeals to the circuit court from the decision of the United States district court, approving or correcting survey.

You will be careful, in making your final returns for patenting, to show in your certificates whether the survey has been finally acted upon by the United States Supreme Court or the circuit court, and if appeal has not been taken from the decree of the district court, and the period for appeal has expired, you will send up with your returns of survey, as the basis of patent, a certificate from the clerk of the proper court, showing that the decree of confirmation has become final and absolute, no appeal having been taken within the limitation fixed by the statute. You are requested to acknowledge the receipt of these instructions.

Very respectfully, your obedient servant,

JOS. S. WILSON,  
*Commissioner.*

L. UPSON, Esq.,  
*U. S. Surveyor General, San Francisco, California.*

*Panoche Grande Rancho and New Idria Mining Company.*

No private land claim in California has perhaps been the subject of more controversy in the courts, Executive Departments, and Congress, than that known as the "Panoche Grande or McGarrahan claim," and in connection with it a claim of the New Idria Mining Company. The matter has recently been the subject of two elaborate and exhaustive opinions rendered by the Hon. W. H. Smith, Assistant Attorney General, which have been concurred in by the Department, and as these opinions so clearly set forth the facts in these cases, and as the principles enunciated are important in the adjudication of similar claims, it is deemed proper to insert them in full, as follows:

DEPARTMENT OF JUSTICE, OFFICE OF ASSISTANT ATTORNEY GENERAL,  
*Washington, July 20, 1871.*

SIR: I have carefully examined the application of Wm. McGarrahan to have the record in the General Land Office restored to the condition it was in prior to July 25, 1870. Before I proceed to consider it, I will give a concise history of this celebrated McGarrahan claim.

March 13, 1844, one Vicente Gomez presented to Micheltorena, then governor of California, a petition praying the governor to grant to the petitioner "the place known by the name of Panoche Grande, bounded on the north by Don Julian Ursua; on the south by the Serriania, (mountain range;) on the east by the Valley de los Tulares; and on the west by Don Francisco Arias; which tract of land contains three square leagues, a little more or less, as shown by the map, which in due time I will present more correctly drawn than the one now presented."

The governor directed the Secretary of State to make the necessary investigations and to report the result.

The Secretary of State, Manuel Jimeno, sent the petition to the first justice of San Juan, the 14th of March, 1844.

The justice, José Antonio Rodreguez, reported March 20, 1844, that the land was vacant, and that there was no reason why the petition should not be granted.

Gomez alleged that a grant had been made to him, and that his papers were deposited in a building in Monterey, and that the building was taken possession of by the United States troops in July, 1846, and that most of the papers were lost or destroyed.

By the treaty of Guadalupe Hidalgo, of February 2, 1848, it was provided that Mexicans established in California might retain their property, and that the United States should pass such laws as might be necessary to give effect to the stipulations of the treaty.—(9 U. S. Stats., 929, treaty, articles 8 and 11.)

By the act of Congress of March 3, 1851, a board of land commissioners was authorized to ascertain and settle land claims in California, subject to an appeal (provided for elsewhere) to the United States district court, with a right of final appeal to the Supreme Court of the United States within five years from the time of making decree.

On the 9th of February, 1853, Gomez, by Pacificus Ord, his attorney, filed his claim for Panoche Grande before the board of commissioners.

On the 6th of March, 1855, the board rejected the claim. The following is a copy of their decision:

“Vicente Gomez v. The United States, No. 569; claim for a place called Panoche Grande, containing four square leagues, situate in the county of Monterey. The petitioner in this case states in his petition that he had a grant for the above-named place, issued in the year A. D. 1844, by Governor Micheltorena, and that the grant was among the archives of the State, in Monterey, at the time that the archives fell into the hands of the Americans, in July, 1846 and that it was either lost or destroyed. He has also given satisfactory proof of the existence and loss of the grant, but has failed entirely to offer any proof whatever going to show that he ever occupied, improved, or cultivated any part of the land, or that he ever saw the land. We are, therefore, of the opinion that the claim is invalid, and a decree rejecting the same will be entered. Rejected.”

While the case was pending before the board, Ord was appointed United States district attorney for the southern district of California. Gomez appealed from the decision of the board to the district court of the northern district of California.

Ord procured a transfer of the case from the northern to the southern district on the ground that the land lay in the southern district.

Gomez, on the 24th of November, 1856, conveyed one-half of the tract to Ord for the nominal consideration of one dollar.

After the appeal the Supreme Court of the United States in the case of Fremont vs. United States, (17 How., 542,) decided that possession was not necessary to the validity of a Mexican grant.

On the 5th of June, 1857, Ord handed the record to Hartman, an attorney, and informed him it was a case in which there was no dispute, and requested him to move the court to reverse the decision of the board and confirm the title. He did so. Ord informed the court that the United States had no objection, and thereupon the court, without investigation or argument, ordered the title to be confirmed. The court omitted to sign the decree.

On the 22d of December, 1857, Gomez conveyed Panoche Grande to McGarrahan, subject to the interest of Ord in the same. The consideration stated in the deed was eleven hundred dollars, (\$1,100.)

On the 8th of February, 1858, the decree was signed and entered *nunc pro tunc*.

It appears that an appeal was docketed and dismissed in the Supreme Court at the December term, 1858, and that the decree of dismissal was set aside and mandate revoked at the December term, 1859, of the same court. This last case is reported in 23 Howard, 326.

On the 21st of March, 1861, the district court (Judge Ogier) on motion set aside all proceedings before that had in his court, on the ground that the decree had been obtained by fraud, and directed that the cause be put on the calendar and set for trial *de novo*.

On the 4th of August, 1862, Judge Ogier having died, his successor, Judge Haight, on application of claimant, set aside the order of Judge Ogier, last named.

An appeal was then regularly moved for and allowed on the part of the United States. The claimant then moved to set aside the order of appeal on the ground that five years had elapsed from the date of the decree, which he contended was June, 1857; the decree of the 5th of February, 1858, having been entered *nunc pro tunc*, as of June, 1857.

December 3, 1862, Judge Haight sustained this view and set aside the order of appeal.

December term, 1863, the Supreme Court overruled Judge Haight, and held that the order of appeal was in time. Gomez vs. United States, (1 Wall., 690.)

In the meantime, and on the 29th of December, 1862, Caleb B. Smith, then Secretary of the Interior, ordered the Commissioner of the General Land Office to issue a patent

to McGarrahan for the land, in accordance with the survey reported by the surveyor general of California.

March 4, 1863, J. P. Usher, then Secretary of the Interior, affirmed the decision of Secretary Smith, and directed that a patent should issue.

March 12, 1863, Attorney General Bates wrote to the Secretary of the Interior requesting him to forbid the issuing of a patent, and gave as his reason for making the request that he desired to have the case reviewed by the Supreme Court.

March 13, 1863, Acting Secretary Otto directed the Commissioner of the General Land Office to suspend the execution and delivery of the patent until further advised by the Secretary.

December term, 1865, the Supreme Court decided the case *on its merits*, and reversed the decision of the district court and directed it to *dismiss the petition*. *United States vs. Gomez*, (3 Wall., 752.)

April 18, 1867, the local officers in California were instructed to suspend all action affecting title to the Panoche Grande until the matter should be disposed of by Congress.

October 5, 1868, McGarrahan presented to the Secretary of the Interior a petition asking for the benefits of the seventh section of the act of July 23, 1866, (14 Stats., 219.) This seventh section provided that persons who, in good faith and for a valuable consideration, had purchased lands of Mexican grantees or assigns, which grants had subsequently been rejected or excluded on final survey, and had used, improved, and continued in the actual possession of the same according to the terms of the original purchase, and where there was no valid adverse title, (except of the United States,) that such persons might purchase the lands of the United States at the minimum price: *Provided*, That such right to purchase should not extend to lands containing mines of gold, silver, copper, or cinnabar.

October 27, 1868, he asked that such portions of the Panoche Grande as did not contain "mines of gold, silver, or cinnabar," might be patented to him upon his paying the minimum price under said seventh section.

August 14, 1868, Secretary Browning declined to express any opinion upon the legal question made by these memorials as the matter was then pending before Congress.

This question does not appear to have been determined by the Department. Secretary Cox, in his letter to the Commissioner of the General Land Office, of August 13, 1870, (vol. 12, page 269,) refers to it as though it had been determined by the Supreme Court in the case of the Secretary *vs.* McGarrahan, (9 Wall., 293.)

The court say in that case the petition was defective in not showing on its face that the lands did not contain "gold, silver, copper, or cinnabar."

And again, "his application to be allowed to purchase the land was made to the Secretary of the Interior, and he was as much bound to prove that the land did not contain mines of the description mentioned as he was to show that his purchase of the donee of the tract was made in good faith and for a valuable consideration, as he was not entitled to a patent if the lands contained mines of gold, silver, copper, or cinnabar, any more than if he had made the purchase in bad faith and without consideration."

The Secretary, in his letter of August 13, 1870, virtually disposes of the McGarrahan case, and adversely to him, and directs the Commissioner to take up the application of the New Idria Mining Company and pass upon it.

There is found recorded in vol. 4, pages 312 to 321, inclusive, of private land grants in California, now in the General Land Office, a patent to William McGarrahan for Panoche Grande. It concludes as follows:

"In testimony whereof, I, Abraham Lincoln, President of the United States, have caused these letters to be made patent, and the seal of the General Land Office to be hereunto affixed.

"Given under my hand at the city of Washington, this fourteenth day of March, in the year of our Lord one thousand eight hundred and sixty-three, and of the Independence of the United States the eighty-seventh.

"By the President:

[SEAL.]

"ABRAHAM LINCOLN.

"W. O. STODDARD, Secretary.

"By \_\_\_\_\_,

*Acting Recorder of the General Land Office."*

The record is marked "Ex'd" for examined.

There is a pencil mark over the following words in the attesting clause and signatures, to wit, "fourteenth," "March," "sixty-three," "eighty-seventh," "Abraham Lincoln," "W. O. Stoddard," and "acting." This mark is now quite indistinct.

There is in pencil, at the left of the attesting clause, the words, "not signed." These words are more distinct.

On page 321, being the last page of this record, there is written thereon, in red ink, a certificate of which the following is a copy.

"DEPARTMENT OF THE INTERIOR,

"General Land Office, July 25, 1870.

"This record, from pages 312 to 321, inclusive, was made in accordance with the cus-



tom at the time, in anticipation of the original being submitted to the officers whose duty it is under the law to sign land-patents; but an order, dated March 13, 1863, having been received from the Acting Secretary of the Interior to suspend the execution and delivery of the patent, under the decision of the Department of the 4th March, 1863, until further advised in the case by the Secretary, the form of patent which had been prepared, and from which the aforesaid record was made, was not submitted for signature, and has never been dated, signed, nor delivered.

"JOS. S. WILSON,

" *Commissioner.*

"J. N. GRANGER, *Recorder.*"

This certificate was made on the record, by reason of a letter from Secretary Cox, of which the following is a copy :

"DEPARTMENT OF THE INTERIOR,

" *Washington, D. C., July 15, 1870.*

"SIR: I have received your letter of the 13th instant, in relation to the application, dated the 11th instant, of George W. McGill, as attorney for William McGarrahan, for a certified copy of the record of the Panoche Grande patent. You inform me that the patent was never signed by the President's secretary to sign land-patents, or countersigned by the recorder of the General Land Office, and that the seal of your office was never affixed thereto.

"As the record is, in your opinion, incomplete, wanting the name of the recorder or acting recorder, you request the ruling of the Department as to whether the copy should be furnished, in view of the provisions of the act of July 2, 1864, entitled 'An act prescribing the terms on which exemptions shall be furnished by the General Land Office.'

"You send me the original instrument and the proposed form of certificate to be attached to the copy asked for, in case such copy should be furnished.

"Your statement is fully established by an inspection of the instrument, and conforms to the evidence which the files of this Department furnish on the subject. I perceive that, by a letter of the Acting Secretary of the Interior, of March 13, 1863, your office was directed to suspend the 'execution and delivery of the patent until further advised in the case by the Secretary.' No subsequent order or direction in conflict therewith appears. The instrument was never perfected in the mode required by law, and it was in its incomplete state improperly admitted to record. It cannot be considered a patent in the legal sense of the term. A paper writing, purporting to convey lands in fee, if never signed, sealed, and delivered, is not a deed, nor is it effectual to pass the title to the land therein described.

"You informed me in our personal interview that it had been the practice to record these inchoate and unperfected patents, including the name of the President's secretary, before he signed them; and that when they were subsequently so signed, the countersigning by the recorder of the General Land Office was afterward affixed to the instrument, and a corresponding change made in the record. I deem the practice to be an objectionable one, and you will give the requisite directions to the Recorder to discontinue it. The instrument should not be recorded until it is in all respects complete and ready for transmission to the party who is thereunto entitled. In every instance where record has been made of an uncompleted instrument, in anticipation of the due execution of it, and the original is in your office, unsigned and unsealed, you will write across the record, in red ink and in legible characters, a statement of the facts, attested by your signature, and countersigned by the recorder of the General Land Office, and this statement should appear in the transcript or exemption of the record of the instrument which you deliver.

"Under the circumstances of this case I have no objection to your giving the requested copy, attaching a certificate in the form presented to me, upon the applicant's complying in other respects with the statute and regulations of your office. The papers accompanying your letters are herewith returned.

"I am, sir, very respectfully, your obedient servant,

"J. D. COX,

*Secretary.*

"Hon. JOS. S. WILSON,

" *Commissioner General Land Office.*"

There is also in the Land Office what purports to be the original patent. It corresponds in all respects with the record, except that it is unsigned by either the President or Recorder, as the following words in the attesting clause, to wit, "fourteenth," "March," "sixty-three," in pencil, and has no pencil-marks drawn over any words, and does not contain the words "not signed," (which in the record are in pencil,) and does not contain the word "Acting," preceding the word Recorder.

Joseph S. Wilson, who signed the certificate of July 25, 1870, as Commissioner, was not Commissioner on the 14th of March, 1863, nor was J. N. Granger then Recorder of the General Land Office. Both of these parties have testified before the Judiciary

Committee of the House of Representatives that they had no personal knowledge on the subject, and did not know that the statements of their certificate of July 25, 1870, were true, and the testimony of other parties connected with the Land Office has been taken before the same committee for the purpose of showing how it was that the record came to be made before the patent had been executed, and that in point of fact the patent never was executed.

June 15, 1871, McGarrahan presented to the Secretary of the Interior a petition reciting the history of the patent as recorded, and alleging that the patent was executed and recorded, and that "Secretary Cox ordered that the record of my (his) patent be destroyed, which was accordingly done on the 25th of July, 1870," and he asks that the Secretary "will be pleased to advise the President to order the restoration of the record of my (his) patent upon the records of the Land Office to the same condition in which it was placed by the decision of President Lincoln, and Secretaries Smith and Usher, and to remove the unauthorized and illegal erasures made on it by direction of Mr. Cox, and that an exemplified copy of this un mutilated record be delivered to me (him)."

I have given thus briefly the entire history of this case, except the action of Congress, and will now proceed to state the conclusions to which I have arrived.

The eighth section of the act of April 25, 1812, (2 Stats., 717,) provided that "all patents issuing from the said office shall be issued in the name of the United States, and under the seal of the said office, and be signed by the President of the United States, and countersigned by the Commissioner of the said office, and *shall be recorded* in the said office in books to be kept for the purpose."

The duty of countersigning was afterwards imposed upon the Recorder instead of the Commissioner. (5 Stats., 417.)

It was the legal duty of the Commissioner to record all patents that had been issued under the seal of his office, signed by the President, and from the fact of such record the law presumes that the patent had been duly signed by the President.

In *The United States vs. Dandridge*, (12 Wheat., 69,) the Supreme Court said: "By the general rules of evidence presumptions are continually made in cases of private persons of acts even of the most solemn nature, when these acts are the natural results or necessary accompaniment of other circumstances. In aid of this salutary principle the law itself, for the purpose of strengthening the infirmity of evidence and upholding transactions intimately connected with the public peace, and the security of private property, indulges its own presumptions. It presumes that every man in his private and official character does his duty until the contrary is proved; it will presume that all things are rightly done, unless the circumstances overturn this presumption according to the maxim *omnia presumuntur rite et solemniter esse acta donec probetur in contrarium*. Thus it will presume that a man acting in a public office has been rightly appointed; that entries found in public books have been made by the proper officer; that upon proof of title, matters collateral to that title shall be deemed to have been done. The books on evidence abound with instances of this kind."

In accordance with this settled rule the presumption is that the patent was duly signed. But it is only a presumption, and may be overcome by proof.

In *Lea vs. Polk County Copper Company*, (21 Howard, 494,) the facts were these:

A patent from the State of Tennessee had issued to William Park Lea. It was signed by the governor, countersigned by the secretary of state, and sealed with the great seal of the State. As originally filled out before signature, it was in the name of William P. Lea, and was altered to William Park Lea by adding the letters "ark" to the P. This was done by the register of the land office, whose duty it was to prepare the patent for the signatures of the governor and secretary.

There was a William Pinkney Lea, and he and William Park Lea wrote their names William P. Lea, the former always, and the latter generally, although he sometimes signed William Park Lea. Both had entered lands, and the register added the letters "ark" to distinguish between them. It was claimed that William Pinkney Lea was the party whose name should have been in the patent. The court, in disposing of the case, said: "Then the presumption comes in that, as a public officer, the register did his duty, and he who impeaches the act as illegal *must prove the allegation*. On this assumption the register filled up the patent, as it is now found, before the governor signed it, and the seal of the State was attached; that is to say, when the patent bears date. Then, again, all the incipient steps authorizing the register to issue the grant, the governor to sign it, and the secretary to attach the great seal, *are presumed as having been regular*; nor was the purchaser required to look behind the patent." (*Baywell vs. Broderick*, 13 Pet., 448.)

This case is a clear admission by the Supreme Court that the actual facts in reference to a patent may be shown, and that, if necessary, the record may be contradicted and corrected. But how, and by whom? Shall it be in the Department where it originated, or must it be in court? Obviously, *when the patent has not been delivered*, it would be much more convenient, and certainly more expeditious, less expensive, and equally safe, to have the correction made in the Department, and under the supervision and

control of the Secretary of the Interior, who is selected on account of his high character. If the Secretary had personal knowledge that the record was untrue, and the error had arisen during his term of office, it is clear that he would have the power, and it would be his duty, to make the record speak the truth. Is it any the less his duty, if the error occurred before his term, provided he is *fully satisfied* there is such error, although he may not have personal knowledge on the subject?

It seems to me that personal knowledge is not essential. In the various subjects that necessarily arise in one of the Departments, it is utterly impossible that the Secretary can have personal knowledge of them all. He must trust to those who are under his charge, and it is proper for him to rely on their statements, when he knows that they are credible and worthy persons. In so grave a matter as altering the record of a patent, he should act with extreme caution, and after diligent inquiry.

In the case now under consideration Secretary Cox has acted upon evidence that was satisfactory to him. If he had jurisdiction, (which I think he had,) and erred in his conclusions, it is settled by multiplied decisions of the Attorneys General that you, as his successor, have no power to reverse him. See opinion of Mr. Wirt, (2 Op., 9;) of Mr. Taney, (2 Op., 464;) of Mr. Nelson, (4 Op., 341;) of Mr. Toucey, (5 Op., 29;) of Mr. Johnson, (5 Op., 123;) of Mr. Black, (9 Op., 101, 301, 357;) of Mr. Stanbery, (12 Op., 358;) of Mr. Hoar, of April 26, 1869, and of Mr. Akerman, of March 7, 1871; also *United States vs. Bank of Metropolis*, (15 Pet., 401.)

In view of these authorities, if I differed with Secretary Cox as to the weight of the evidence, I should not feel justified in advising a reversal by you of what he had done; but I do not differ with him. In my opinion, after careful examination of all the light now shed upon the question, *the patent for Panoche Grande was not executed by the President*. Entertaining these views, I must advise adversely to the prayer of McGarahan.

Very respectfully,

W. H. SMITH,  
*Assistant Attorney General.*

Hon. C. DELANO,  
*Secretary of the Interior.*

DEPARTMENT OF THE INTERIOR,  
*Washington, D. C., August 4, 1871.*

SIR: I have examined the application of the New Idria Mining Company for the issuing of a patent for 480 acres of mineral lands in California, and am of opinion that the same should be rejected.

Some of the necessary steps in the case were taken in direct violation of the orders of the proper officer in the Interior Department.

The evidence is defective in not showing that the proper notice and diagram were posted up on the premises, and in not identifying the claims alleged in the petition and advertisement.

There is no sufficient proof of the citizenship of the claimants, and the amount of land claimed exceeds that authorized by law.

I inclose a copy of the opinion of Assistant Attorney General Smith in the case. I concur with him in the conclusion that the claim should be rejected. You will take the proper steps to carry this decision into effect.

The papers transmitted with your letter of 17th September, 1870, are herewith returned.

I am, sir, very respectfully, your obedient servant,

B. R. COWEN,  
*Acting Secretary.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office.*

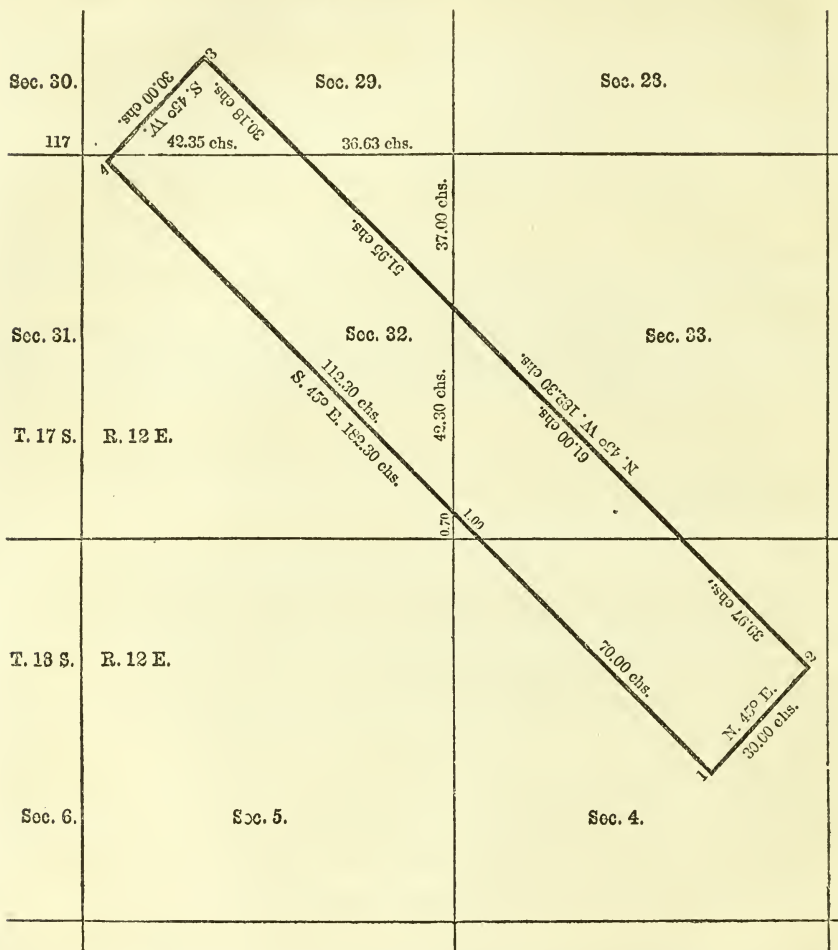
DEPARTMENT OF JUSTICE,  
OFFICE ASSISTANT ATTORNEY GENERAL,  
*Washington, July 21, 1871.*

SIR: I have examined with care the application of the New Idria Mining Company for the issuing of a patent for 480 acres of mineral lands in townships seventeen and eighteen south, range twelve east, Mount Diablo meridian, California. This company was incorporated on the 25th of January, 1858, under a general law of the State of California, with a capital stock of \$23,000, divided into one hundred and fifteen shares, among eleven shareholders. It was to continue fifty years, have its principal place of business at San Francisco, and be governed by a board of five trustees. It filed its application and diagram in the local land office on the 6th day of February, 1867. The application alleged that the New Idria Mining Company was the owner of the mining claim known as the New Idria, situate in the San Carlos district, Fresno county, California; that it claimed a vein or lode of cinnabar and other minerals, and had occupied and improved the same under the names of the Molina, San Carlos, and New Idria mines.



It contained the other averments necessary to bring it within the act of July 26, 1866, and had attached a diagram, of which the following is a copy:

*Mount Diablo meridian.*



The company published, in the Monterey Gazette, a notice for ninety days, commencing on the 8th of February, 1867, and ending on the 16th of May, 1867, of which the following is a copy;

"U. S. LAND OFFICE, SAN FRANCISCO, *February 1, 1867.*

"Whereas the companies known as the Morning Star, the New Idria, and the Victorina, claiming certain mineral veins or lodes and lands in townships Nos. 17 and 18 south, and Range No. 12 east, Mount Diablo meridian, included in the San Francisco U. S. land district, (the bounds and extent of said land claims being fully set forth in the notices and on the claim itself,) has this day filed in the U. S. land office for this district a declaratory statement, with accompanying diagram of the claim, declaring therein the intention of said companies to mine for cinabar and other minerals, and apply for a U. S. patent for the lodes and land claimed; it is hereby ordered that the annexed notices be published for ninety days in the Monterey Gazette, a newspaper published at Monterey, in the State of California.

"Given under my hand this 1st day of February, 1867.

"Feb. 8-3m."

"JAS. W. SHANKLIN,  
"Register."

## "NOTICE.

"The undersigned give notice that they intend to apply for a patent for the vein or lode set forth in the diagram and notice posted on the claim, and filed in the U. S. land office, San Francisco, called the Morning Star, situated in the San Carlos district, county of Fresno, State of California.

"Dated this 1st day of February, 1867.

"THE NEW IDRIA MINING CO.,  
"By WM. H. L. BARNES,

"Feb. 8-3m."

"President.

## "NOTICE.

"The undersigned give notice that they intend to apply for a patent for the vein or lode set forth in the diagram and notice posted on the claim, and filed in the U. S. land office, San Francisco, called the Victorina, situated in the San Carlos district, county of Fresno, State of California.

"Dated this 1st day of February, 1867.

"THE NEW IDRIA MINING CO.,  
"By WM. H. L. BARNES,

"Feb. 8-3m."

"President.

## "NOTICE.

"The undersigned give notice that they intend to apply for a patent for the vein or lode set forth in the diagram and notice posted on the claim, and filed in the U. S. land office, San Francisco, called the New Idria, situated in the San Carlos district, county of Fresno, State of California.

"Dated this 1st day of February, 1866. (?)

"THE NEW IDRIA MINING CO.,  
"By WM. H. L. BARNES,

"Feb. 8-3m."

"President.

A notice and diagram were posted on the claim for ninety days, but what that notice and diagram were, and when the ninety days commenced, is not shown in the case.

The survey was made on the 6th and 7th days of June, 1867, by James T. Stratton, United States deputy surveyor, and approved by L. Upson, surveyor general of California, on the 22d day of June, 1868.

The papers in the case were forwarded by the register to the Commissioner of the General Land Office on the 29th of July, 1868, and received by him on the 12th of August, 1868. Among these papers was a certified copy of the local laws, adopted by the miners of the San Carlos district on the 4th of December, 1854, by which it was provided that a discoverer of quicksilver or silver mines should be entitled to 160 acres, to be so located that the mine or vein should be situate on the same.

Having made this preliminary statement, I will proceed to consider the questions which arise in the case, some of which are purely technical, and others are substantial and important, and affect the merits.

1. It appears from the papers on file that the clerk of the Judiciary Committee of the House of Representatives, on the 1st of April, 1867, transmitted to the Commissioner of the General Land Office a joint resolution (H. R. 45) directing the Secretary of the Interior to "withhold the issuing of any patent, and to permit no proceedings in his Department affecting the title to the tract of land known as the Rancho Panoche Grande, in the counties of Monterey and Fresno, in California, until the claim thereto now pending in Congress shall have been disposed of."

On the 18th of April, 1867, the surveyor general of California and the register and receiver of the proper district were instructed, as suggested by said joint resolution, and these instructions were repeated May 23, 1867, February 1, 1868, and August 17, 1868.

The New Idria Mining Company was advised of these instructions, and yet, notwithstanding the same, at the request and at the instigation of the company, the surveyor general caused the premises to be surveyed on the 6th and 7th days of June, 1867, and approved the plat thereof on the 22d of June, 1868, and the register forwarded the case to the office of the Commissioner of the General Land Office on the 29th of July, 1868, although the aforesaid instructions were still in force and had never been reversed. Their action seems to have been in accordance with an opinion given by Delos Lake, esq., then United States district attorney of California. They were not officers under the district attorney, but were officers under the superintendence of the Secretary of the Interior. The acts that were thus done against the express direction of the proper

officer were material steps in making out the claim of the New Idria Company for the land in question, and I submit that to approve of them now as regular and valid would be a species of self-stultification not complimentary to the Interior Department, and not calculated to promote the just administration of the public business of subordinate officers.

2. There is no evidence that a proper notice or diagram was posted on the claim. The affidavits that have been filed do not describe the notice or diagram, and do not state when they were posted up. Whether they were sufficient in law or not I am unable to say. The applicant should have proved just what the notice and diagram were, and when they were posted on the claim. The third section of the act of July, 1866, requires that such notice and diagram shall be posted in a conspicuous place on the claim. As the method of acquiring mineral lands is a special statutory proceeding, the statute should be carefully followed.

3. The notice published in the Monterey Gazette describes the companies who are making the application as the Morning Star, the New Idria, and the Victorina, whereas the New Idria Mining Company, in their application, describe them as the Molina, the San Carlos, and the New Idria. Now it may be that the Morning Star and the Molina are identical, and that the San Carlos and the Victorina are identical, but if they are, there is no proof of the fact on file in this case. The published notice should agree in description with the application, and if it does not, the applicant has failed to comply with the statute.

4. The second section of the act of July 26, 1866, reads as follows:

"That whenever any person or association of persons claim a vein or lode of quartz, or other rock in place, bearing gold, silver, cinnabar, or copper, having previously occupied and improved the same according to the local customs or rules of miners in the district where the same is situated, and having expended in actual labor and improvements thereon an amount of not less than \$1,000, and in regard to whose possession there is no controversy or opposing claim, it shall and may be lawful for said claimant or association of claimants to file in the local land office a diagram of the same, so extended laterally or otherwise as to conform to the local laws, customs, and rules of miners, and to enter such tract and receive a patent therefor, granting such mine, together with the right to follow such vein or lode with its dips, angles, and variations, to any depth, although it may enter the land adjoining, which land adjoining shall be sold subject to this condition."

It will thus be seen that the "vein or lode of quartz, or other rock in place, bearing gold, silver, cinnabar, (quicksilver,) or copper, to which a patent can be obtained, is one which has been previously occupied and improved according to the local customs or rules of miners in the district where the same is situated, and on which not less than \$1,000 have been expended in actual labor and improvements, and also one "*in regard to whose possession there is no controversy or opposing claim.*"

Congress had the power to make such qualifications in granting mineral lands as it saw fit. It chose to say that no such lands should be patented unless they were those that were free from all questions relating to the possession. Not content with saying that the possession should be free from controversy which might imply active assertion of right by proceedings in court or otherwise, it did say that the mines shall be free from all opposing claims. That is to say, no patent shall issue for any mineral lands about which any one, other than the petitioner, asserts any right of possession, and all controversy must relate to possession, for title is in the Government, and therefore cannot be in question. Stronger language could not well be used.

If we look into the history of these New Idria mines, we shall find that there has been a continuous, persistent, and bitter contest in regard to them from the outset, and up to the present time. William McGarrahan has sought by suits in ejectment, and otherwise, and by congressional action, to possess himself of these identical premises. He is now before your Department, and has been for the last ten years.

If this second section were the only provision on this subject, I should entertain no doubt but that this controversy and opposing claim of McGarrahan was fatal to the application now made. But it may be, in view of the provisions of the third section, relating to an "adverse claim," and the manner of presenting it, that the true meaning of the second section is, that there must be no controversy or opposing claim *at the time of the final hearing and the issuing of patent.* If this be the true construction, and I am inclined to think it is, it may be that this objection is not well taken, as I understand the McGarrahan claim has been virtually rejected by your Department. At all events the question is not free from doubt.

5. The first section of the act of July 26, 1866, provides, "That the mineral lands of the public domain, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and occupation by all citizens of the United States, and those who had declared their intention to become citizens, subject to such regulations as may be prescribed by law, and subject also to the local customs or rules of miners in the several mining districts, so far as the same may not be in conflict with the laws of the United States." In other words, the only parties entitled to the benefits of this act are



citizens of the United States, and those who have declared their intention to become citizens. In my opinion none other are so entitled. In the present case there is no proof that either of the original parties who located these mines, or either of them, or that any of the subsequent owners who have conveyed to the New Idria Mining Company, were ever citizens of the United States, or had declared their intention to become such. Nor is there any proof that any of the persons who were incorporated as the New Idria Mining Company ever were such citizens or persons. The only item of proof that bears upon this point is the evidence that this company is an incorporated company under the laws of California. It is claimed that by reason of such incorporation it is a citizen of California, and therefore of the United States. From such a view of the law I must dissent.

The mineral lands within its territory belong to the United States. Congress has carefully reserved them from all grants. By the act of March 3, 1807, (2 Stat., 448,) it reserved all lead mines from land sold. It excepts them from the operation of its pre-emption and homestead laws, and from all grants to railroads and to the States. It makes the parties who enter upon them, without authority, liable to an action for damages and to a prosecution for a penalty. And when it has undertaken to dispose of them, it has granted them only to its own citizens, or those who had declared their intention to become such. Every bill introduced into Congress, purporting to dispose of mineral lands, so far as I have been able to ascertain, contained such a clause. The Frémont bill introduced into the Senate, September 10, 1850, the second day after the admission of the State of California, confined its grants to American citizens, and was amended so as to include those who had declared their intention to become citizens. (22 Cong. Globe, part 2, p. 1362.)

The Felch bill, introduced at the same session, contained the same clause.

The act of July 26, 1866, expressly so provides. Otherwise it would be in the power of foreigners, who might be inimical to the well-being and prosperity of the Government, to absorb the entire mineral wealth of the country, and turn this vast engine against its true interests.

To my mind it is clear that the privileges of exploring and occupying, and the privilege of entering the land thus explored and occupied, is given to citizens, and those who have declared their intent, and to *them alone*. I cannot confine this privilege, as some have done, to the first section. This view is strengthened by looking at the intent of Congress as shown in its enactments in regard to the public lands. The pre-emption act is limited in terms to "every person being the head of a family, or widow, or single man over the age of twenty-one years, and *being a citizen of the United States or having filed his declaration of intention to become a citizen as required by the naturalization laws*." (Act of September 4, 1841, sec. 1, 5 Stat., 455.)

The language in the homestead act is almost identical. (Act of May 20, 1862, 12 Stat., 392.) Is it to be supposed that Congress, when it has been so particular to limit the right of acquiring the public lands, *not mineral*, to citizens and those who have declared their intention, would, when it came to dispose of the most valuable of all public lands—the mineral lands—give them to anybody and everybody whether citizens or not? The idea is preposterous, and an interpretation of the section which gives such results should certainly be rejected.

The question recurs, is a corporation, created by the laws of the State of California, a citizen of the United States within the purview of this statute?

It is somewhat difficult to give an exact definition of the word citizen. It is sometimes said to be a person who, under the laws and Constitution of the United States, has a right to vote for representatives in Congress and other public officers, and also is qualified to fill offices in the gift of the people. (1 Bouv. Dict., 231.) This definition would exclude women and children. A citizen of the United States is a native born or naturalized person of either sex, who owes allegiance to, and is entitled to protection from, the United States, or a person who is made a citizen by treaty stipulation or by constitutional or statutory law.

A corporation, says Chief Justice Marshall, in *Dartmouth College vs. Woodward*, 4 Wheaton, p. 636, is "an artificial being, invisible, intangible, and existing only in contemplation of law. Being the mere creature of law, it possesses only those properties which the charter of its creation confers upon it, either expressly or as incidental to its very existence. These are such as are supposed best calculated to effect the object for which it was created. Among the most important are immortality, and if the expression may be allowed, individuality; properties by which a perpetual succession of many persons are considered as the same, and may act as the single individual. They enable a corporation to manage its own affairs without the perplexing intricacies, the hazardous and endless necessity of perpetual conveyance for the purpose of transmitting it from hand to hand. It is chiefly for the purpose of clothing bodies of men in succession with these qualities and capacities, that corporations were invented and are in use."

From the above it is apparent that in general the terms, citizen and corporation, are distinct and have widely different signification.

There has grown up in the United States courts a rule which treats a corporation *for the purpose of suing and being sued* as a citizen. This rule has been adopted for convenience in practice. At first it was held that where there were two or more plaintiffs, and two or more defendants, each plaintiff be capable of suing each defendant in order to support the jurisdiction of the court. (Strawbridge *vs.* Curtis, 3 Cranch, 266.) The same court held that a corporation aggregate, comprised *entirely* of citizens of one State, may sue a citizen of another State in the circuit court of the United States. And further, that a corporation aggregate cannot in its corporate capacity *be a citizen*.

Bank of United States *vs.* Deveaux, (5 Cranch, 81,) Chief Justice Marshall said, "The jurisdiction of this court being limited, so far as respects the character of the parties in this particular case, to controversies between citizens of different States, both parties must be citizens to come within the description. That invisible, intangible, and artificial being, that mere legal entity, a corporation aggregate, is *certainly not a citizen*, and consequently cannot sue or be sued in the courts of the United States, unless the rights of the members in this respect can be exercised in their corporate name. If the corporation be considered as a mere faculty, and not as a company of individuals, who, in transacting their joint concerns, may use a legal name, they must be excluded from the courts of the Union."

The court held that the corporation could sue and be sued if all its stockholders were citizens of the State where the suit was pending. The same principle was afterward decided in the Commercial Bank of Vicksburg *vs.* Slocum et al. (14 Pet., 60.)

The Supreme Court, in Louisville Railroad Company *vs.* Letson, (2 How., 550,) went a step further, and held that a citizen of one State can sue a corporation which has been created by and transacts its business in another State where the suit was brought, although some of the members of the corporation were not citizens of the State where the suit was brought. Judge Wayne, in delivering the opinion of the court, said: "A corporation created by a State to perform its functions under the authority of that State, and *only suable there*, though it may have members out of the State, seems to us to be a person, though an artificial one, inhabiting and belonging to that State, and therefore entitled, *for the purpose of suing and being sued*, to be deemed a citizen of that State."

And again: "We confess our inability to reconcile these qualities of a corporation—residents, habitaney, and individuality—with the doctrine that a corporation aggregate cannot be a citizen *for the purposes of a suit in the courts of the United States*, unless in consequence of a residence of all the corporates being of the State in which the suit is brought."

In Marshal *vs.* Baltimore & Ohio Railroad Company, (16 How., 327,) Judge Grier said: "A corporation, it is said, is an artificial person, a mere legal entity, invisible and intangible. This is, no doubt, metaphysically true in a certain sense. The inference, also, that such an artificial entity cannot be a citizen, is a logical conclusion from the premises which cannot be denied. But a citizen who has made a contract, and has a 'controversy' with a corporation may also say, with equal truth, that he did not deal with a mere metaphysical abstraction, but with natural persons; that his writ has not been served on an imaginary entity, but on men and citizens; and that his contract was made with them as the legal representatives of numerous unknown associates or secret and dormant partners."

In Covington Drawbridge Company *vs.* Shepherd, (20 How., 233,) Chief Justice Tancy said: "In the case of Lafayette Insurance Company *vs.* French, the declaration stated that the corporation itself was a *citizen*. Now, no one, we presume, ever supposed that the artificial being created by an act of incorporation could be a citizen of a State in the sense in which that word is used in the Constitution of the United States, and the averment was rejected because the matter averred was '*simply impossible*.'"

I have cited these passages for the purpose of showing how the judicial mind has treated this question, and how uniformly it has been held that the quality of citizenship was given to a corporation from the necessity of the case, and for the purpose of allowing it to sue and be sued, and for that alone, and that a corporation was in no sense a citizen within the meaning of that term as used in the Constitution or in the laws relating to the public lands.

If a corporation is a citizen within the meaning of the act of 1866, then foreigners, for example, the Chinese, may flood this country, organize themselves into corporations—a thing that is easily done under general laws—and absorb every acre of its mineral lands. A construction that leads to such consequences does not commend itself to my mind. I am of opinion that the New Idria Mining Company have not shown such citizenship as entitles them to a patent.

6. The fourth section of the act of July, 1866, is in these words: "That when such location and entry of a mine shall be upon unsurveyed lands, it shall and may be lawful, after the extension thereto of the public surveys, to adjust the surveys to the limits of the premises according to the location and possession and plat aforesaid, and the surveyor general may, in extending the surveys, vary the same from a rectangular form to suit the circumstances of the country and the local rules, laws, and customs of



miners: *Provided*, That no location hereafter made shall exceed two hundred feet in length along the vein for each location, with an additional claim for discovery to the discoverer of the lode, with the right to follow such vein to any depth, with all its dips, variations, and angles, together with a reasonable quantity of surface for the convenient working of the same as fixed by local rules: *And provided, further*, That no person may make more than one location on the same lode, and not more than three thousand feet shall be taken in any one claim by any association of persons."

The last proviso of this section limits the quantity of land that can be appropriated by any one association to three thousand feet.

It is true that under the local rules adopted for the San Carlos district, in 1854, a person was allowed to take up 160 acres, but that rule must give way to a statutory one which conflicts with it. This is carefully provided for in the first section. It declares that the mineral lands may be occupied "subject to such regulations as may be prescribed by law, and subject also to the local customs or rules of miners in the several mining districts so far as the same may not conflict with the laws of the United States."

Now, the local law says that in mining for cinnabar, the miner may appropriate 160 acres. The statute of the United States says that "not more than three thousand feet shall be taken in any one claim, by an association of persons." The statute must control.

The New Idria Mining Company claim to be the assignees of three different associations—the Molino, the San Carlos, and the New Idria.

The Molino mine was located March 21, 1854, by R. Repa, José D. Molina, H. F. Pitts, and William Mulin. The lands claimed are described as follows: "Situated in the county of Mariposa, State of California, and inclosed within the following limits: Beginning one mile and a half northeast of the Aurora Silver mine, at a stake marked A, No. 1; thence south 200 yards, to a stake marked B, No. 2; thence west 300 yards, across an arroyo to a tree marked C, No. 3; thence north 210 yards, to a stake marked D, No. 4; thence east 300 yards, across the above-mentioned arroyo to the point of beginning." This would give an area of 12.38 acres. The interest of all these parties has been duly conveyed to the New Idria Mining Company.

The San Carlos mine was located November 22, 1854, by H. F. Pitts, P. Collins, T. Smith, James Preffo, T. M. Murales, R. B. Hampton, D. W. Gomez, John Young, A. Pollard, and H. G. Balenger. The lands claimed are described as follows: "Situated in the county of Mariposa, and State of California, and inclosed within the following limits: Beginning two miles south of the Aurora Silver mine, at a stake marked X; thence east to a stake marked B, 230 yards; thence southeast 500 yards to a stake marked D; thence southwest 230 yards to the point of beginning." This would give an area of 28.76 acres. These parties have conveyed to the New Idria Mining Company.

The New Idria mine was located December 13, 1854, by H. F. Pitts, P. Collins, and H. G. Balenger. In their declaration of location they say that "they claim by right of discovery, as well as by right of possession, for a long time past, the quicksilver mine which, as subdivided, is known as the 'New Idria,' 'Molino,' and 'San Carlos,' quicksilver mines, being bounded as follows: Beginning on the southeastern slope of Mount Carlos, county aforesaid, at a stake and stones erected there for a boundary, and marked as per subjoined plat of survey, No. 1; thence running N. 5° E. 15 chains to a stake and stones, No. 2; thence at right angles N. 45° W. 220 chains to a stake and stones, No. 3; thence at right angles S. 45° W. 30 chains to a stake and stones, No. 4; thence at right angles S. 45° E. 220 chains to a stake and stones, No. 5; thence at right angles N. 45° E. 15 chains, to the place of beginning." This would give an area of 660 acres. These parties have conveyed to the New Idria Mining Company.

Granting that associations may assign, and that the assignee may hold to the same extent that the several assignors might, and this company would now be entitled to hold not exceeding nine thousand feet in length. Neither the Molina nor the San Carlos ever located on or claimed 160 acres. The Molino's location only covered a tract 200 by 300 yards, and amounting to a little over 12 acres; and the San Carlos, a strip 230 by 500 yards, and amounting to a little over 28 acres.

The New Idria claimed to locate a large tract of some 660 acres, covering both of the other companies. It does not appear that either the Molino or San Carlos ever claimed or took any steps towards securing any more land than they actually located.

The New Idria now claim 480 acres, being 160 acres for each of the three associations that have assigned to them. In view of the express terms of the statute, I do not see how they can make good any such claim. Congress certainly did not intend to provide that all new claims originating after the passage of the act should be limited to the three thousand feet for each association, but that all claims originating before its passage should be entitled to 160 acres for each association. That would be offering a reward to those who had become trespassers, and were liable to prosecution, and discriminating in their favor as against those who had in all respects complied with the law.

This case has been pending many years and has been represented by eminent coun-



sel. and it is safe to say has been presented as favorably for the company as the facts will allow.

I must advise adversely to the issuing of a patent as claimed.

Very respectfully,

W. H. SMITH,  
*Assistant Attorney General.*

Hon. C. DELANO,  
*Secretary of Interior.*

DEPARTMENT OF THE INTERIOR,  
*Washington, D. C., August 4, 1871.*

SIR: I have considered your application of 15th June last, requesting me to advise the President to direct that the certificate should be erased and canceled which had been written by order of Secretary Cox across the last page of the General Land Office record of the patent for the premises called "Panoche Grande." I must decline to grant your request. In my opinion the Secretary of the Interior has power to correct the record of a patent at any time before its delivery, and perhaps afterward, so as to make it correspond with the facts; this power is not limited to cases of which he has personal knowledge, but he may act upon the statements and evidence of his trusted subordinates, and upon matters that took place before he became Secretary.

Secretary Cox having acted upon the subject now before me, I regard his action as conclusive and beyond my power of revision or reversal, even though I should differ with him as to the facts.

But I do not differ with him. I think the weight of the evidence shows that the patent was not executed by the President.

I inclose a copy of the opinion of Assistant Attorney General Smith, on the subject, and agree with him in the conclusions at which he arrived.

Very respectfully,

B. R. COWEN,  
*Acting Secretary.*

WM. MCGARRAHAN, Esq.

*Private land claims in New Mexico, Colorado, Arizona, and territory other than California, acquired under the treaty of Guadalupe Hidalgo and the Gadsden purchase.*

Special attention is invited to the subject of Spanish and Mexican land titles in that part of the national domain acquired by the treaty of Guadalupe Hidalgo and the Gadsden purchase, not embraced in California.

The act of Congress approved July 22, 1854, (Stats., vol. 10, p. 308,) devolved upon the surveyor general of New Mexico the duty of examining and deciding upon the validity of private land claims in that territory, and provided that his decisions should be submitted to Congress for final action in the way of confirmation or rejection. The provisions of law in that respect were extended to Colorado Territory by the seventeenth section of the act of February 28, 1861, (Stats., vol. 12, p. 176.) The statutory requirements and the surveyor general's powers and duties thereunder are shown in the subjoined instructions from this office, dated August 21, 1854, as approved by the honorable Secretary of the Interior, August 25, 1854.

In this region there are reported to be quite a number of private land claims resting upon titles which had their inception under the former government, few of which have been adjusted. In 1860 the surveyor general of New Mexico reported that there were then on his docket over one thousand claims to be examined and decided on as soon as they could be taken up, and that justice to the claimants demanded that their claims should be acted upon at the earliest moment; but a vigorous prosecution of this branch of his duties would retard the execution of public and private surveys and interfere materially with the dispatch of other official duties pressing upon him. From the report of the surveyor general of New Mexico for the current year, it appears that only fifty-five claims of this kind have been acted upon, and he believes that a much larger number remain to be filed.

It will be observed that the act of July 22, 1854, before referred to, makes provision only for the adjustment of claims arising under the treaty of Guadalupe Hidalgo of 1848, but does not provide for the settlement of such as fall within the limits of the treaty of December 30, 1853, with Mexico, (Stats., vol. 10, p. 1031,) commonly known as the Gadsden purchase, which embraces an important part of the Territory of New Mexico, and for the adjustment of claims in which authority of law should be given.

It is submitted, however, that existing legislation in regard to these claims is very unsatisfactory both to the Government and to claimants, in proof of which it is only necessary to refer to reports of congressional committees and to frequent reports of the surveyor general of New Mexico and this office on the subject.

On May 28, 1858, Mr. Sandidge, from the House Committee on Private Land Claims, reported as follows:

*The Committee on Private Land Claims, to whom was referred a large mass of documents relative to private land claims in the Territory of New Mexico, instruct me to make the following report:*

It appears that a number of these claims were before the Committee on Public Lands of the last Congress; but, from some cause, no action was taken thereon by the committee, nor by Congress. These claims, with others, since forwarded by the surveyor general of the Territory, have received the most careful attention your committee could give them; but, in justice to the committee, I must say this examination has been confined entirely to what seemed to be the principal papers in each case; having no time to scrutinize the evidence and the application as made by the surveyor general of the Spanish and Mexican laws and usages to each of them in detail. Nor will it ever be in the power hereafter of any committee of this House to make such an examination as will be entirely satisfactory, should these claims be allowed to accumulate before Congress. It is now ten years since the Territory of New Mexico was acquired, and nearly four years since the surveyor general of the Territory was authorized to examine and report to us the private land claims of its people; and although protected, as is supposed by treaty, in the enjoyment of their property, no man in that Territory, without some action of Congress, can say that his title, however acquired, would hold against any claimant who might purchase his lands from the Government. Heretofore, and from the same cause which has embarrassed your committee, Congress has been compelled, in passing upon similar claims in Louisiana, Florida, and Missouri, to rely upon the report of the several boards of land commissioners, and to confirm or reject, by whole classes, as recommended by the commissioners.

In view of such action, the people of New Mexico are not at all pleased to be compelled by law to submit their muniments of title to one man, whose fitness for surveying is not supposed to qualify him particularly for discharging the duties of a judge, and yet whose opinions are expected to control, to a great extent, the final action of Congress upon their claims. Because of this, and that Congress, if it shall reserve the right to itself of passing judgment, *must* rely upon the report of an examining commission, your committee believed it very important that such a board should consist of at least three persons, whose recommendations, whether to Congress or a judicial tribunal, would be entitled to, and command, more respect than your committee or the House can award to the report of the surveyor general alone.

But as Congress may not create such a board, and as it is due to the parties interested that the titles by which their lands are held should not be passed over to be settled by another generation, your committee have authorized me to report favorably (with one or two modifications) upon all the claims recommended for confirmation by the surveyor general; with the understanding that should the action of Congress conform to the views of the committee as to this board, the claims may be finally determined under the new law.

But for the gross injustice to the people of New Mexico of delaying for an indefinite period action upon their claims, and the certainty that under existing arrangements Congress can never consider them under more favorable circumstances than at this time, your committee would not have been willing to report upon any of these individual claims for the reason first stated—want of time to examine fully, and the unknown quantity of land claimed by most of the parties.

This last difficulty cannot be obviated without a survey of the lands, and that, it is presumed, will not be ordered by Congress in advance of a recognition of title. Of the fourteen claims proposed to be confirmed by the bill herewith reported, the area of but

five of them is either stated or estimated. They are for one league, four leagues, five leagues, 7,600 acres, and about 20,000 acres.

Whether the other claims embrace a less or greater amount is not and cannot be made known from the documentary evidence of title forwarded by the surveyor general.

The grant in each case refers to some stream, hill, mountain-top, valley, or other known natural object, for boundary.

Attention has also been drawn to this matter in reports by my predecessors nearly every year since 1856, and in a communication recently received from the governor of Colorado he reports as follows:

As nearly as can be ascertained, the following Mexican or Spanish land-grant claims are located wholly or in part in the Territory of Colorado: Vigil and St. Vrain, area claimed, 4,096,345 acres; Vigil and St. Vrain, area confirmed, 96,651 acres; Nolan, area confirmed, 48,825½ acres; Maria Baea, No. 4, area claimed, 100,000 acres; Sangre de Cristo, area claimed, 1,200,000 acres; Antonio, (not confirmed,) claimed, 2,500,000 acres; Beaubien and Miranda, about 300,000 acres; making in all 8,342,821½ acres; to which add the Ute Indian reservation, 19,077,120 acres, and the total comprises much more than one-third of the whole area of the Territory of Colorado, all of which is rendered unavailable at present both to Government and people for purposes of sale and settlement.

In order to realize the magnitude of this unavailable land I call your attention to the fact that it comprises more acres than the whole of the State of Ohio, or than Massachusetts, New Hampshire, Rhode Island, Vermont, Connecticut, and Maryland, combined.

Should you seek a remedy for the present unsatisfactory condition of affairs, I would most respectfully recommend that the Secretary of the Interior, or Congress, compel the grantees of all these tracts, or their representatives, to definitely locate the area conceded them by the Commissioner of the General Land Office within some limited time. So soon as this is done all this land will be open to pre-emption and entry, and both the Government and the settlers will be largely benefited thereby. Some of these grants are already inhabited by several thousand settlers, or squatters, as they are called, who cannot secure Government patents for their claims, and who fear to make valuable improvements until these Mexican grantees locate the quantity of land awarded them by the decisions of the Secretary of the Interior.

I sincerely believe that the interests of the General Government, and of our people, and the growth both of this Territory and New Mexico, will be subserved by the adoption of some policy which will enable emigrants who desire in good faith to settle upon the public lands, to know where they can make their selections without fear of future disturbance by adverse claimants. This whole matter is becoming so serious a drawback to the settlement of some portions of this Territory, that I feel it incumbent upon me to call the attention of your Department to the subject.

It seems to me that, if practicable, the Ute reservation should be reduced in quantity, or at least the limits should be thoroughly defined by a public and official survey, marked by such monuments as will prevent future trespass upon the domain of the savages.

Some of the claims heretofore confirmed by Congress and surveyed cover principalities in extent, the claimed limits of one such embracing by estimation more than two millions of acres.

It is most important to the growth and prosperity of those Territories, to which settlement is being rapidly attracted by the extension of railroads, that a separation be made at the earliest possible period between the public lands and those claimed under foreign titles.

In this way only can the settler know where to locate safely, so as not to intrude on the premises of others. The want of such definitive adjustment of the lines of public and private lands has already, in one instance, brought to notice by the governor of New Mexico, led to armed hostilities between settlers and employés of the grant claimants.

It is respectfully suggested that the creation by Congress of a commission similar to that instituted by the act of March 3, 1851, for California, would best conduce to a speedy and just settlement of claims of this kind, and promote the rapid growth of those young and enterprising Territories.

Some of the acts of Congress heretofore passed confirming private



land claims in New Mexico do not provide for the issuing of patents for the claims thereby confirmed. It has been claimed that the second section of the act approved March 3, 1869, (Stats., vol. 15, page 342,) provides for the issuing of such evidences of title; but, upon presentation of the question to the Department proper, it has been ruled that said section applies only to the claims confirmed by that act, and not to titles confirmed by previous acts. To relieve the matter from doubt, it is suggested that Congress be requested to pass an explanatory act or resolution construing said section.

## INSTRUCTIONS TO THE SURVEYOR GENERAL OF NEW MEXICO.

GENERAL LAND OFFICE, *August 21, 1854.*

SIR: The eighth section of the act approved July 22 last for the establishment of the office of surveyor general in New Mexico declares as follows:

"SEC. 8. *And be it further enacted,* That it shall be the duty of the surveyor general, under such instructions as may be given by the Secretary of the Interior, to ascertain the origin, nature, character, and extent of all claims to lands under the laws, usages, and customs of Spain and Mexico; and for this purpose may issue notices, summon witnesses, administer oaths, and do and perform all other necessary acts in the premises. He shall make a full report on all such claims as originated before the cession of the territory to the United States by the treaty of Guadalupe Hidalgo, of 1848, denoting the various grades of title, with his decision as to the validity or invalidity of each of the same under the laws, usages, and customs of the country before its cession to the United States; and shall also make a report in regard to all pueblos existing in the territory, showing the extent and locality of each, stating the number of inhabitants in the said pueblos respectively, and the nature of their titles to the land; such report to be made according to the form which may be prescribed by the Secretary of the Interior; which report shall be laid before Congress for such action therein as may be deemed just and proper, with a view to confirm *bona fide* grants, and give full effect to the treaty of 1848 between the United States and Mexico; and until the final action of Congress on such claims, all lands shall be reserved from sale or other disposal by the Government, and shall not be subject to the donations granted by the previous provisions of this act."

The duty which this enactment devolves upon the surveyor general is highly important and responsible. He has it in charge to prepare a faithful report of all the land-titles in New Mexico which had their origin before the United States succeeded to the sovereignty of the country, and the law contemplates such a report as will enable Congress to make a just and proper discrimination between such as are *bona fide* and should be confirmed, and such as are fraudulent, or otherwise destitute of merit, and ought to be rejected.

The treaty of 1848 between the United States and Mexico (United States Statutes at Large, volume 9, page 922) expressly stipulates, in the eighth and ninth articles, for the security and protection of private property. The terms there employed, in this respect, are the same in substance as those used in the treaty of 1803, by which the French republic ceded the ancient province of Louisiana to the United States, and consequently, in the examination of foreign titles in New Mexico, you will have the aid of the enlightened decisions, and the principles therein developed, of the Supreme Court of the United States upon the titles that were based upon the treaty of cession and the laws of Congress upon the subject.

The security to private property for which the treaty of Guadalupe Hidalgo stipulates, is in accordance with the principles of public law as universally acknowledged by civilized nations.

"The people change their allegiance; their relations to their ancient sovereign is dissolved, but their relations to each other, and their rights of property, remain undisturbed."—(United States *vs.* Perchinan, 7 Peters's Reports.)

In the case of the United States *vs.* Arredondo and others, (6 Peters's Reports,) the Supreme Court declare that Congress "have adopted, as the basis of all their acts, the principle that the law of the province in which the land is situated is the law which gives efficacy to the grant, and by which it is to be tested whether it was *property* at the time the treaties took effect."

Upon the same basis Congress has proceeded in the present act of legislation, which requires the surveyor general, under instructions from the Secretary of the Interior, to ascertain the origin, nature, character, and extent of all claims to land "under the laws, usages, and customs of Spain and Mexico;" and arms the surveyor general with power for the purpose, by authorizing him to "issue notices, summon witnesses, administer oaths, and do and perform all other necessary acts in the premises."

The private land-titles in New Mexico are derived from the authorities of old Spain, as well as of Mexico.

Among the "necessary acts" contemplated by the law, and required of you, is that you shall—

1st. Acquaint yourself with the land system of Spain, as applied to her ultramarine possessions, the general features of which are found—modified, of course, by local requirements and usages—in the former provinces and dependencies of that monarchy on this continent. For this purpose you must examine the laws of Spain, the royal ordinances, decrees, and regulations as collected in White's *Recopilacion*, two volumes.

By acts of Congress approved May 26, 1824, May 23, 1828, and June 17, 1844, (United States Statutes at Large, vol. 4, page 52, chap. 173; page 284, chap. 70; and vol. 5, page 676, chap. 95,) the United States district courts were opened for the examination and adjudication of foreign titles. Numerous cases on appeal under these laws, and other cases on writs of error, in which actions on ejectment in the courts below had been instituted, were brought before the Supreme Court of the United States, where the rights of property under inceptive and imperfect titles, which originated under the Spanish system, have been thoroughly examined and disensed with eminent ability.

For these decisions I refer you to Peters's and Howard's reports of the decisions of the Supreme Court of the United States. It is important you should carefully examine them in connection with the Spanish law, and the legislation of Congress on the subject, in order that you may understand and be able to apply the principles of the Spanish system, as understood and expounded by the authorities of our Government.

2d. Upon your arrival at Santa Fé you will make application to the governor of the Territory for such of the archives as relate to the grants of land by the former authorities of the country. You will see that they are kept in a place of security from fire, or other accidents, and that access is allowed only to land-owners, who may find it necessary to refer to their title records, and such references must be made under your eye, or that of a sworn employé of the Government.

You will proceed at once to arrange and classify the papers in the order of date, and have them properly and substantially bound. You will then have schedule (marked 1) of them made out in duplicate, and will prepare abstracts, (No. 2,) also in duplicate, of all the grants found in the records, showing the names of grantees, date, area, locality, by whom conceded, and under what authority.

You will prepare, in duplicate, from the archives or authoritative sources, a document (No. 3) exhibiting the names of all the officers of the Territory who held the power of distributing lands, from the earliest settlement of the Territory until the change of government, indicating the several periods of their incumbency, the nature and extent of their powers conceding lands; whether, and to what extent, and under what conditions and limitations, authority existed in the governors or political chiefs to distribute (repartir) the public domain; whether in any class of cases they had the power to make an absolute grant—and, if so, for what maximum in area—or whether subject to the affirmance of the departmental or supreme government; whether the Spanish surveying system was in operation, and since what period in the country, and under what organization; also, with verified copies in the original, and translations, of the laws and decrees of the Mexican republic, and regulations which may have been adopted by the general government of that republic for the disposal of the public lands in New Mexico. Herewith you will receive a table of land measures adopted by the Mexican government, translated from the "*Ordenanzas de Tiercas y Aguas*," by Marianas Galvan, edition of 1844, as printed in Ex. Doc. No. 17, first session Thirty-first Congress, House of Representatives, containing much valuable information on the subject of California and New Mexico, and to which document I would invite your special and careful examination,

In a report of the 14th November, 1851, from the surveyor general of California, it is stated that all the grants, &c., of lots or lands in California, made either by the Spanish government or that of Mexico, refer to the "*vara*" of Mexico as the measure of length; that by common consent in California that measure is considered as exactly equivalent to *thirty-three* American inches. That officer then inclosed to us copy of a document he had obtained as being an extract of a treaty made by the Mexican government, from which it would seem that another length is given to the "*vara*;" and by J. H. Alexander's (of Baltimore) Dictionary of Weights and Measures, the Mexican *vara* is stated to be *equal to 92.741 of the American yard*.

This office, however, has sanctioned the recognition, in California, of the Mexican *vara* as being equivalent to *thirty-three* American inches.

You will carefully compare the data furnished in the table herewith, and in the foregoing, with the Spanish measurements in use in New Mexico, and will report whether they are identical; or if varied in any respect by law or usage, you will make a report of all the particulars.

You should also add to "Document No. 3," the forms used under the former governments to obtain grants, beginning with the initiatory proceeding, viz, the petition, and indicating the several successive acts until the title was completed. A copy of the

"schedule," "abstract," and "document," required of you in the foregoing, duly authenticated by you, should constitute a part of the permanent files of the surveyor general's office, and duplicates of them should be sent as soon as practicable to the Department of the Interior.

The knowledge and experience you will acquire in arranging the archives, collecting materials, and making out the documents called for by these instructions, will enable you to enter understandingly upon the work of receiving and examining the testimony which may be presented to you by land claimants, and prepare your report thereon for the action of Congress.

In the first instance, you will provide yourself with a journal, consisting of substantially bound volume or volumes, which is to constitute a complete record of your official proceedings in regard to land-titles; and with a suitable docket, for the entry therein of claims in the order of their presentation, and so arranged as to indicate at a glance a brief statement of each case, its number, name of original and present claimant, area, locality, from what authority derived, nature of title, whether complete or incomplete, and your decision thereon.

Your first session should be held at Santa Fé, and your subsequent sessions at such places and periods as public convenience may suggest, of which you will give timely notice to the Department.

You will commence your session by giving proper public notice of the same, in a newspaper of the largest circulation in the English and Spanish languages; will make known your readiness to receive notices and testimony in support of the land claims of individuals, derived before the change of Government.

You will require claimants in every case, and give public notice to that effect, to file a written notice setting forth the name of "present claimant;" name of the "original claimant;" nature of claim, whether inchoate or perfect; its date; from what authority the original title was derived, with a reference to the evidence of the power and authority under which the granting officer may have acted; quantity claimed; locality, notice, and extent of conflicting claims, if any, with a reference to the documentary evidence and testimony relied upon to establish the claim, and to show a transfer of right from the "original grantee" to "present claimant."

You will also require of every claimant an authenticated plat of survey, if a survey has been executed, or other evidence, showing the precise locality and extent of the tract claimed.

This is indispensable, in order to avoid any doubt hereafter in reserving from sale, as contemplated by law, the particular tract or parcel of land for which a claim may be duly filed, or in communicating the title to the same hereafter, in the event of a final confirmation.

The effect of this will be not only to save claimants from embarrassments and difficulties inseparable from the presentation and adjudication of claims with indefinite limits, but will promote the welfare of the country generally, by furnishing the surveyor general with evidence of what is claimed as private property, under treaty and the act of July 22, 1854; thus enabling him to ascertain what is undisputed public land, and to proceed with the public surveys accordingly, without awaiting the final action of Congress upon the subject.

You will take care to guard the public against fraudulent or antedated claims, and will bring the title-papers to the test of the genuine signature, which you should collect of the granting officers, as well as to the test of the official registers or abstracts which may exist of the titles issued by the granting officers. In all cases, of course, the *original* title-papers are to be produced, or loss accounted for; and where copies are presented, they must be authenticated; and your report should also state the precise character of the papers acted upon by you, whether originals or otherwise. Where the claim may be presented by a party as "present claimant," in right of another, you must be satisfied that the derangement of title is complete; otherwise the entry and your decision should be in favor of the "legal representatives" of the original grantee.

Your journal should be prefaced by a record of the law under which you are required to act, and of your commission and oath of office; and should contain a full record of the notice and evidence in support of each claim, and of your decision, setting forth, as succinctly and concisely as possible, all the leading facts, particulars, and the principles applicable to the case, and upon which such decision may be founded. All the original papers should, of course, be carefully numbered, filed, and preserved; and upon each should be indorsed the volume and page of the record in which they are entered, and such reference should be made on the journal and docket as will properly connect them with each other.

Your docket should be a condensed exhibit of every case and of your decision. The claims, both as to grade and dignity, may be classified by numerals or alphabetically, accompanied by explanatory notes, in such a manner that it will show every case confirmed and every one rejected by you.

In the case of any town-lot, farm-lot, or pasture-lots, held under a grant from any



corporation or town to which lands may be granted for the establishment of a town by the Spanish or Mexican government, or the lawful authorities thereof, or in the case of any city, town, or village lot, which city, town, or village existed at the time possession was taken of New Mexico by the authorities of the United States, the claim to the same may be presented by the corporate authorities; or where the land on which the said city, town, or village was originally granted to an individual, the claim may be presented by or in the name of such individual; and the fact being proved to you of the existence of such city, town, or village at the period when the United States took possession, may be considered by you as *prima facie* evidence of a grant to such corporation, or to the individuals under whom the lot-holders claim; and where any city, town, or village shall be in existence at the passage of the act of 22d July, 1854, the claim for the land embraced within the limits of the same may be made and proved up before you by the corporate authority of the said city, town, or village. Such is the principle sanctioned by the act of 3d March, 1851, for the adjudication of Spanish and Mexican claims in California; and I think its application and adoption proper in regard to claims in New Mexico.

In the month of March, 1849, there was published in the Atlantic States an extract of a letter dated December 12, 1848, at Santa Fé, New Mexico, purporting to be from a young officer of the Army, in which it was stated that "the prefect at El Paso del Norte has for the last few months been very active in disposing (for his own benefit) of all lands in that vicinity that are valuable, *antedating* the title to said purchasers; 'that these land titles' would be made a source of profitable litigation," &c. It will be your duty to subject all papers under suspicion of fraud to the severest scrutiny and test in order to settle the question of their genuineness.

You will also collect information, from authentic sources, in reference to the laws of the country respecting minerals, and ascertain what conditions were attached to grants embracing mines; whether or not the laws and policy of the former governments conferred absolute title in granting lands of this class in New Mexico. It is proper, also, and you are instructed in the case of every claim that may be filed, to ascertain from the parties, and require testimony, as to whether the tracts claimed are mineral or agricultural; and you will be careful to make the necessary discrimination in the record of your proceedings and your docket. Your report should be divided into two parts: Part first should embrace individual and municipal claims, and should be prepared in the manner contemplated by law, and in accordance with the requirements in the foregoing instructions.

The law further requires you also to "make a report in regard to all pueblos existing in the Territory, showing the extent and locality of each, stating the number of inhabitants in the said pueblos respectively, and the nature of their titles to the land." Part second of your report should be devoted to this branch of your duty.

It will be your business to collect data, from the records and other authentic sources, relative to these pueblos, so that you will enable Congress to understand the matter fully and legislate in such a manner as will do justice to all concerned.

In a report dated July 29, 1849, in camp near Santa Fé, from the Indian agent, James S. Calhoun, to the Commissioner of Indian Affairs, he says: "The Pueblo Indians, it is believed, are entitled to the early and special consideration of the Government of the United States; they are the only tribe in perfect amity with the Government, and are an industrious, agricultural, and pastoral people, living principally in villages ranging north and west of Taos south, on both sides of the Rio Grande, more than two hundred and fifty miles;" that, by a Mexican statute "these people," as he had been informed by Judge Houghton, of Santa Fé, "were constituted citizens of the republic of Mexico, granting to all of mature age, who could read and write, the privilege of voting." But this statute has no practical operation; that "since the occupancy of the territory by the Government of the United States, the territorial legislature of 1847 passed the following act, which at the date of the Indian agent's report was in force:

"SECTION 1. *Be it enacted by the General Assembly of the Territory of New Mexico,* That the inhabitants within the Territory of New Mexico, known by the name of Pueblo Indians, and living in towns or villages built on lands granted to such Indians by the laws of Spain or Mexico, and conceding to such inhabitants certain lands and privileges, to be used for the common benefit, are severally, hereby, created and constituted bodies politic and corporate, and shall be known in law by the name of the 'Pueblo,' &c., (naming it,) and by that name they and their successors shall have perpetual succession, sue and be sued."

In a subsequent report, viz, of the 4th of October, 1849, the same officer reported from Santa Fé that "the pueblos or civilized towns of Indians of the Territory of New Mexico are the following:

	Inhabitants.
In the county of Taos: Taos, Picoris .....	283
In the county of Rio Arriba: San Juan, Santa Clara .....	500
In the county of Santa Fé: San Il de Fonso, Namba, Pojoaque Tesuque....	590

	Inhabitants.
In the county of Santa Ana: Cochite, Santo Domingo, San Filipe, Santa Ana, Yia Jenez .....	1,918
In the county of Bernalillo: Sandia Gleta .....	883
In the county of Valencia: Leguna, Acona, Zunia .....	1,800
Opposite El Paso: Socoro, Islettas .....	600

## RECAPITULATION.

*Pueblos of New Mexico.*

County of Taos .....	283 over five years of age.
County of Rio Ariba .....	500 over five years of age.
County of Santa Fé .....	590 over five years of age.
County of Santa Ana .....	1,918 over five years of age.
County of Bernalillo .....	883 over five years of age.
County of Valencia .....	1,800 over five years of age.
District of Tontero, opposite El Paso del Norte .....	600 over five years of age.
	<hr/>
	6,524
	<hr/>

The above enumeration, it is stated by the officer mentioned, "was taken from census ordered by the legislature of New Mexico, convened December, 1847, which includes only those of five years of age and upwards;" and further, that "these pueblos are located from ten to near one hundred miles apart, commencing north at Taos, and running south to near El Paso, some four hundred miles or more, and running east and west two hundred miles;" this statement having no reference to pueblos west of Zunia.

In another dispatch, dated the 15th October, 1849, at Santa Fé, the same agent reports that "these pueblos are built with direct reference to defense, and their houses are from one to six stories high," &c.; that "the general character of their houses is superior to those of Santa Fé;" they "have rich valleys to cultivate," &c.; and they "are a valuable and available people, and as firmly fixed in their homes as any one can be in the United States;" that "their lands are held by Spanish and Mexican grants, to what extent is unknown;" that Santa Ana, as Major Weightman had informed the agent, "decreed in 1843 that one born in Mexico was a Mexican citizen, and as such is a voter, and therefore all the Pueblo Indians are voters;" but that "the exercise of this privilege was not known prior to what is termed an election, the last one in this Territory," &c.

It is obligatory on the Government of the United States to deal with the private land titles, and the "pueblos," precisely as Mexico would have done had the sovereignty not changed. We are bound to recognize all titles as she would have done—to go that far and no further. This is the principle which you will bear in mind in acting upon these important concerns.

You will append to your report on the pueblos the best map of the country that can be procured on a large scale, and will indicate thereon the localities and extent of the several pueblos as illustrative of that report, which you are desired to prepare and transmit to the Department at as early a period as the nature of the duty will allow.

Very respectfully, your obedient servant,

JOHN WILSON,  
*Commissioner.*

WM. PELHAM, Esq.,  
*U. S. Surveyor General of New Mexico.*

The foregoing instructions are hereby approved.

R. McCLELLAND,  
*Secretary.*

DEPARTMENT OF THE INTERIOR, August 25, 1854.

*Extract of a treaty made with the Mexican government, which accompanied a report dated November 14, 1851, from the United States surveyor general of California, respecting the ratio of land measures between those employed under the Mexican government and those in use in the United States.*

[From the Mexican ordinance for land and sea.]

Article 20th of the agreement entered into between the minister plenipotentiary of the Mexican republic and her agents in London, the 15th of September, 1837, with the holders of Mexican bonds.

20th. In compliance of what is ordered by the seventh article of the preceding law, and in order to carry into effect the stipulation in the preceding agreement, in regard

to the holders of bonds deferred, it is declared that the act of which mention is made in said agreement answers to 4,840 English yards squared, equivalent to 5,762.403 Mexican varas square; inasmuch that the sitio de ganado moyer contains 4,338.964 acres, the Mexican vara having been found, by exact measures, equal to 837 French millimetres, and consequently to  $\ast \frac{616469}{1000000}$  of the English imperial yard.

Reducing the ratio of 4,840 square yards and 5,762.403 square varas, the vara will be .....	32.99312
Reducing the 4,338.464 acres .....	32.99311
Reducing the fraction $\frac{616469}{1000000}$ .....	32.992884
The fraction mentioned in note $\frac{915755}{1000000}$ .....	32.96718

*Table of land measures adopted in the republic of Mexico.*

Names of the measures.	Figures of the measures.	Length of the figures expressed in varas.	Breadth in varas.	Areas in square varas.	Areas in caballerias.
Sitio de ganado moyer.....	Square.....	5,000	5,000	25,000,000	41.023
Criadero de ganado moyer...	Square.....	2,500	2,500	6,250,000	10.255
Sitio de ganado menor.....	Square.....	3,333 $\frac{1}{3}$	3,333 $\frac{1}{3}$	11,111,111 1-9	18.232
Criadero de ganado menor...	Square.....	1,666 $\frac{2}{3}$	1,666 $\frac{2}{3}$	2,777,777 3-9	4.558
Caballeria de tierra.....	Right angled parallelogram.	1,104	552	609,408	1
Media caballeria.....	Square.....	552	552	304,704	$\frac{1}{2}$
Cuarto caballeria o Suerte de tierra.	Right angled parallelogram.	552	276	152,352	$\frac{1}{4}$
Fenega de sembraduro de maiz.	Right angled parallelogram.	376	184	56,784	1-12
Sala para casa .....	Square.....	50	50	2,500	0.004
Fundo legal para pueblos...	Square.....	1,200	1,200	1,440,000	2.036

The Mexican vara is the unit of all the measures of length, the pattern and size of which are taken from the Castilian vara of the mark of Burgos, and is the legal vara used in the Mexican republic. Fifty Mexican varas make a measure which is called cordel, which instrument is used in measuring lands.

The legal league contains 100 cordels, or 5,000 varas, which is found by multiplying by 100 the 50 varas contained in a cordel. The league is divided into two halves and four quarters, this being the only division made of it. Half a league contains 2,500 varas, and a quarter of a league 1,250 varas. Anciently the Mexican league was divided into three miles, the mile into a thousand paces of Solomon, and one of these paces into five-thirds of a Mexican vara; consequently the league had 3,000 paces of Solomon. This division is recognized in legal affairs, but has been a very long time in disuse, the same as the pace of Solomon, which in those days was called vara, and was used for measuring lands. The *mark* was equivalent to two varas and seven-eighths—that is, eight marks containing twenty-three varas—and was used for measuring lands.

## 22—OPERATIONS AND RULINGS UNDER THE MINING STATUTES OF JULY 26, 1866, AND JULY 9, 1870.

Under these very liberal enactments miners having expended an amount equal to \$1,000 in labor and improvements upon their respective claims, and in regard to whose possession there is no controversy or opposing claim, are enabled, after proper notice, to have their claims surveyed; and upon final payment of the Government price of the land, to receive complete title by patent in lieu of what had before been a mere possessory claim under local mining customs and regulations. Numerous applications for patents for mines are being received, and in many cases final titles have passed to the claimants.

These enactments, inaugurating, as they do, an entirely new system in our public-land policy, have opened a new and extensive field of operations, and in dealing with the interests involved the General Land

*\*Translation of a note at the foot of the page.*—Without doubt, in this fraction there is an error of the press, since considering the English yard 914 millimetres, and the Mexican vara 837 millimetres, the vara will be  $\frac{915,755-1,000,000}{1,000,000}$  of a yard, the first figure 6 being the inverted 9.



Office has, for want of precedents by which to govern its actions, encountered many difficulties in adjudicating the numerous questions arising in the administration of these statutes.

It has always been held that where the legislature of a State or Territory has enacted general laws regulating the extent of mining claims and the manner of their location, such laws should be regarded as the local customs or rules of miners, and that under the statute proof of conformity therewith is essential in establishing a right to a patent from the Government in all cases where the claim had its inception *subsequent* to the date of such State or territorial enactments. Such enactments are held to be in full force and unaffected by the mineral laws of Congress, except where they sanction locations in *excess* of the limits fixed by Congressional laws, in which cases they are restricted accordingly.

In those States and Territories where the local legislatures have failed to enact general laws in relation to mining locations, the customs and regulations adopted at miners' meetings in the different districts are held to govern, it being of course understood that in making locations since the enactment of mining laws of Congress they cannot exceed the extent therein specified, whatever such district regulations may allow.

In the adjustment of claims of this character it becomes necessary therefore to consult the laws of the various mineral States and Territories relating to the subject, where such laws have been enacted, or, in the absence of such legislation, to be informed of the laws and regulations adopted by miners as a body in each local mining district. It is proposed, as a matter of convenient reference in the future, to give in this report a brief digest of laws and regulations governing in the various mineral localities so far as they relate to the extent of mining claims allowed to each person or association of persons.

*Extent of mineral locations in New Mexico.*

The legislature of New Mexico, on the 18th day of January, 1865, passed an "Act concerning mining claims;" and the question was presented to this office as to the rights of claimants and the duties of the land officers, in view of its provisions in connection with those of the law of Congress, upon which it was ruled in effect as follows:

The first proviso to the fourth section of the mining act of Congress, approved July 26, 1866, requires: "That no location hereafter made shall exceed 200 feet in length along the vein for each locator, with an additional claim for discovery to the discoverer of the lode, with the right to follow such vein to any depth, with all its dips, variations, and angles, together with a reasonable quantity of surface for the convenient working of the same, as fixed by local rules;" it being provided further "that no person may make more than one location on the same lode, and not more than 3,000 feet shall be taken in any one claim by any association of persons." Said act, among other conditions, restricts the right to apply for and receive patents to those who have previously occupied and improved their claims according to the local customs or rules of miners.

The manner of making locations and the number of feet that can be taken on the same vein or lode by an individual or an association depends upon the regulations in force in the mining regions; the act of July 26, 1866, in no way superseding or modifying these regulations or customs except where they authorize the location of more than 200 feet on the same lode by any person, or more than 3,000 feet by any association of persons, *since* the 26th of July, 1866.

An individual cannot, *since* said date, locate more than 200 feet upon the same lode, unless he is the discoverer, nor an association more than 3,000 feet; but whether an individual can locate *as much* as 200 feet, or an association as much as 3,000 feet, depends upon the mining regulations in force at the date of such locations, and in the latter case also upon the *number of persons* forming such association.

Individuals cannot, by forming themselves into companies or associations, locate a greater number of feet to each person than can be done by each acting separately. They may locate as a company or an association at the rate of 200 feet to each individual embraced in it, 200 feet additional being allowed the discoverer, if the local regulations permit that extent to be located, until 3,000 feet are taken, after which the right of such company or association to locate upon the lode is exhausted, no matter how many members may compose it.

In States or Territories where the mining regulations limit locations to less than 200 feet to each individual, or less than 3,000 feet to any association of persons, claimants will be restricted accordingly, the right to locate not being enlarged by the act of Congress.

The act of the territorial legislature of New Mexico referred to, among other things, provides :

That every *discoverer* of a lode, ledge, or vein of gold-bearing quartz, or of a lode, crevice, or deposit of silver, cinnabar, copper, lead, coal, or any other ore, or the same mixed with other metals or ores, shall have the privilege of locating and of holding, as against all persons and powers, except the United States, *six hundred feet* of the length of such lode, ledge, vein, deposit, or crevice, horizontal measurement, of its entire width, including all of its dips, openings, spurs, and angles, &c.

The act further provides :

That all mines and mineral grounds heretofore occupied in this Territory, upon which mining has not been prosecuted regularly for a period of ten years or more, except in cases where the fee-simple title to the land has been granted by competent authority to those claiming the same, or where the claimant has remained in actual possession and occupation, provided the possession be unquestionable, are hereby declared vacant and abandoned, and liable to the operation of this act as fully in all respects as if they had never been occupied or denounced; and he or they who shall re-occupy such vacant and abandoned mines shall be entitled to all the rights and privileges of original discoverers, as provided in this act. Companies of two or more persons, incorporated or otherwise, shall have the same rights and privileges under this act as single or natural persons, and may locate and hold in manner aforesaid *one mining claim of three hundred feet for each member of the company, and one discovery claim*; provided, no company shall locate more than *four claims, including one discovery claim*, or one thousand five hundred feet in all upon any one vein or mine; *provided further*, a company may acquire by purchase but *four mining claims*, and this under the same conditions that bound the vendors.

From the foregoing it will be seen that while the territorial law regulating mining claims in New Mexico fixes the maximum of a *company* location at 1,500 feet, being but one-half of the extent prescribed by the congressional enactment, it fixes the extent of *individual* locations at 300 feet, or 100 feet in *excess* of the congressional limit.

In dealing, therefore, with mining claims in this Territory, located between the dates of January 18, 1865, and July 26, 1866, the territorial law is recognized in all respects; but with regard to locations made *subsequent* to July 26, 1866, it is held—1st, that no individual location can exceed 200 linear feet along the course of the vein or lode, except in the case of the discoverer, who is entitled to an additional 200 feet; 2d, that no company location can exceed 1,500 linear feet along the vein or lode, and such locations cannot in any case be made at a rate exceeding 200 linear feet to each member of the company, except to the discoverer, who is entitled to locate an additional claim of 200 feet; and, 3d, that this restriction to 1,500 feet is applicable only to company *locations*, and is not

held to affect their right to *purchase* the possessory titles to as many adjoining claims upon the lode as may be authorized by the territorial law aforesaid, which, as before stated, limits such right of purchase to *four claims*; and as a "claim," since the passage of the law of Congress of July 26, 1866, cannot exceed 200 feet of the linear extent of a lode, a company having made an original location of 1,500 feet in manner aforesaid cannot by purchase obtain the possessory right to more than 800 additional feet on the same lode, or 2,300 feet in all, being 1,500 feet by virtue of location and discovery and 800 feet by purchase of adjoining locators.

*Colorado.*

In this Territory, prior to the first session of its legislature in 1861, the mineral region was divided into several districts, and in each of these districts the miners adopted their own rules and regulations governing the location and holding of claims. In most cases a claim on a lode was fixed at 100 feet in length, with surface-ground 50 feet wide, while the discoverer of a lode was allowed to hold one claim by right of discovery and one additional claim as a locator. In some of the districts, however, a discovery claim of 200 feet was allowed, the other claims being limited to 100 feet.

In all the districts it was ruled that actual discovery and opening of the crevice until well-defined walls were found were essential to entitle the discoverer to an additional claim. When the lode was thus once found and defined, other locators could hold adjacent claims by recording the same in proper manner.

On the 7th of November, 1861, the legislature passed "An act concerning lode claims," which defines a claim upon a lode to mean 100 feet of the length of such lode, surface measurement, of the entire width of such lode or crevice. This law did not annul or invalidate claims which had their inception under district laws, but confirmed them, and provided a uniform law applicable to all mining districts in the Territory with respect to locations made after its passage.

On the 11th March, 1864, the legislature passed "An act to define the extent of mineral and quartz lodes," which provides that all mineral and quartz lodes discovered thereafter shall cease and terminate, so far as they have any legal existence, at the distance of 800 feet in either direction on the line of the lode from the center of the discovery shaft.

On the 9th February, 1866, the legislature passed "An act concerning mines and minerals," which provided:

That hereafter each and every person who shall discover any mineral lode or vein of gold-bearing ore, or of silver or other valuable metals, in this Territory, shall, by virtue of such discovery, be entitled to take, hold, and possess 1,400 feet, linear measure, of such lode or vein, of which the discovery shaft shall be the center thereof; and said 1,400 feet so taken shall be known and described as the discovery claim.

Said act also provides that—

All lodes or veins of gold, silver, or other valuable minerals which may hereafter be discovered shall be marked at the point of discovery by a substantial stake, post, or stone monument having inscribed thereon the name of the discoverer or discoverers, and the name of the lode or vein, with date of discovery; and the discoverer or discoverers shall, before recording, excavate thereon a shaft at least 10 feet deep, or deeper if necessary to find a well-defined crevice, or forfeit all right and title he or they may have acquired by virtue of such discovery—

the extent of surface-ground allowed for the convenient working of the claim being 25 feet on each side of the center of the vein or lode.

This act likewise provides, in substance, that upon all lodes discovered in compliance with its provisions there shall be set apart two claims of



100 feet each—one for the benefit of common schools, and the other for the use and benefit of disabled miners and poor of the Territory or State of Colorado—which claims shall be located respectively at the extremities of the discovery claim, and shall be known and described as number one east, and the other as number one west, from discovery.

On the 11th February, 1870, the legislature of Colorado passed "An act for the relief of pre-emptors and locators of veins or lodes of quartz or other rock on the mineral lands of the public domain," by which it is provided that—

No statutory law of Colorado Territory shall be so construed as to prohibit the location of 3,000 feet or less, in any vein or lode, in the manner prescribed in section 4 of an act of Congress approved July 26, 1866, entitled "An act granting the right of way to ditch and canal owners over the public lands, and for other purposes," nor to prejudice any rights to obtain patents for the same as provided in said act. All pre-emptions and locations of 3,000 feet or less on any vein, lode, or ledge, made since the passage of the said act of Congress and conforming to the same, shall be good and valid. Nothing in this act shall be so construed as to prejudice any rights acquired prior to the passage of this act.

As the mining act of Congress makes it one of the conditions precedent to obtaining a patent that the claimant shall have previously occupied and improved his claim according to local customs or rules of miners, this office requires claimants to show by competent proof under which of these district regulations or territorial enactments their respective claims had their inception.

### *Montana.*

In this Territory the local law in relation to lode-claims is the act of its legislative assembly passed December 26, 1864, entitled "An act relating to the discovery of gold and silver quartz, leads, lodes, or ledges, and of the manner of their location," by which it is provided in effect, that any person or persons who may thereafter discover any quartz, lead, lode, or ledge, shall be entitled to one claim thereon by right of discovery, and one claim each by pre-emption; that claims on any lead, lode, or ledge, either of gold or silver, thereafter discovered, shall consist of not more than 200 feet along the lead, lode, or ledge, together with surface-ground 50 feet in width on each side thereof for working purposes; that to entitle any person or persons to record in the county recorder's office of the proper county any lead, lode, or ledge, or claim thereon, there shall first be discovered in said lode, lead, or ledge, a vein or crevice of quartz or ore, with at least one well-defined wall; that before any record of such claim shall be made, there shall be placed at each extremity of the discovered claim a good and substantial stake, not less than 5 inches in diameter, said stake to be firmly planted or sunken in the ground, and to extend 2 feet above ground; that upon each stake there shall be placed in legible characters the name of the lead, lode, or ledge, and that of the discoverer or discoverers, the date of discovery, and the name of each pre-emptor or claimant, and the direction or bearing as near as may be of his or her claim.

Said act further requires that notice of such discovery or pre-emption shall be filed for record in the county recorder's office of the county in which the same may be situated within fifteen days from the date of such discovery or pre-emption, and fixes the extent which may be located along the course of any vein, lead, lode, or ledge, in addition to the discovery claim, at 1,000 feet along such lead, lode, or ledge, in each direction from the discovery claim thereon.

In acting upon application for patents for quartz claims in Montana,

located since 26th December, 1864, this office accordingly holds that no claim to a patent in that Territory under the law of Congress is valid for an extent greater than 2,200 linear feet of a vein or lode, and that a claimant must, in order to establish a right to a patent, make satisfactory proof of having complied with the district or territorial law applicable to his claim, in force at the time of its location.

*Locations of placer-mines in Montana.*

On the 11th December, 1867, the legislative assembly of Montana enacted—

That any person or persons who may hereafter discover any gulch, bank, bar, or hill claim or claims, shall be entitled to one claim by discovery right and one claim each by pre-emption; that all gulch claims shall be 200 feet up and down said gulch, and extending 200 feet upon each side from the center of said gulch; that all bank, bar, or hill claims shall be 200 feet square; that a gulch with its banks, bars, and hill-sides shall constitute but one district; that all claims owned or claimed to be owned by any person or persons shall be represented by actual working of said claim or claims at least two days in each week, except at any time when such claim cannot be practically worked, which shall be determined by two-thirds of the claim-holders of the district.

The act further provides, in substance, that each district shall elect a recorder, whose duty it shall be to record such claims in a book of record, to be open to the inspection of all persons, and to give to any person or persons a certificate of such pre-emption; that before any record shall be made under the provisions of this act, there shall be placed at the extremity of each claim or discovery claim one stake, said stake to be at least two inches in diameter, containing the name of the person or persons pre-empting such claims—such persons to have at least fifteen days from the date of staking a claim in which to record the same; that the act shall not be so construed as to prohibit any person or persons from holding one or more claims by purchase; that any person or persons holding one or more claims by pre-emption or purchase, and working upon one, or digging a drain or other ditch for such claim, shall be considered by such work as actually representing the same; and finally the act provides that nothing therein contained shall be so construed as to prohibit any body of miners, to the number of thirty, from making any and all local laws which they may desire, upon a call of the miners of any district, or upon the posting of a notice in three public places for at least three days, specifying the time and place of holding a meeting, provided that said laws shall not conflict with vested rights acquired under authority of this act prior to such meeting.

As the mining acts of Congress confer no authority for granting patents for either lode or placer claims *not* previously occupied and improved in accordance with local customs or rules of miners, applicants for patents for placer-mines in Montana are required to furnish satisfactory evidence of having complied with the foregoing legislative enactment; or, if their claims existed prior to its passage, it will be incumbent upon them to show under what local customs or rules their claims are held, and the origin of their right of possession.

*California, Nevada, and Utah.*

In the States of California and Nevada, and in the Territory of Utah, the mining regulations of the several districts are still in force and recognized as the local customs or rules of miners; a compliance with which is essential to establish a right to a patent under the mining act of July 26, 1866. Where these district regulations permit locations of

greater extent than is sanctioned by the said act, they are restricted accordingly, when made subsequent to its passage.

In the remaining mineral States and Territories, viz, Oregon, Washington, Idaho, Wyoming, and Arizona, this office is as yet unadvised as to whether the location of mineral claims is governed by general legislative enactments, or by the regulations adopted by the miners themselves in the different districts, no applications for patents for this class of lands having yet been properly reported by the local land officers in those localities.

*Status of mining claims in school sections.*

An application having been made for a patent for a mining claim situated in a school section in the State of California, the question was raised as to the rights of the applicant, in view of the grant made to the State by the act of March 3, 1853, (U. S. Stats., vol. 10, page 244.)

It being satisfactorily shown that the mineral claim in question was taken up, held, and improved according to local customs and rules in 1864, and the land was not surveyed by the United States until 1870, it was ruled that at the date of its location said mining premises formed a part of the unsurveyed public domain, which, by the first section of the mining statute of 26th July, 1866, is declared "to be free and open to exploration and occupation by all citizens of the United States, and those who have declared their intention to become citizens;" and that as the applicant was in the occupancy of his claim at the date of the Government survey of the township by virtue of the authority of said statute, the fact that the premises fall within a school section, which circumstance the miner had no means of knowing previous to the survey, did not affect his right under the statute of July 26, 1866, and that after complying with its provisions and requirements he would be entitled to a patent; the State of California being by law allowed other land as indemnity for the area so patented.

In dealing with another mineral claim situated in a school section in California, the location of which was not made until *after* the filing of the plat of the official survey of the township, the right of the claimant to a patent under the mining statute was denied, the land having already passed to the State; the Supreme Court of the United States having decided, in the case of *Cooper vs. Roberts*, (18 Howard, 173,) that mineral lands pass with a school land-grant to the State.

*Adverse claims.—Further legislation necessary.*

The sixth section of the mining act of July 26, 1866, provides—

That whenever any adverse claimants to any mine located and claimed as aforesaid shall appear before the approval of the survey as provided in the third section of this act, all proceedings shall be stayed until final settlement and adjudication in the courts of competent jurisdiction of the rights of possession to such claim, when a patent may issue, as in other cases.

The act is entirely silent as to the time within which, or the party by whom, the action shall be commenced in court for the determination of the question of right of possession; and in consequence this office encounters much difficulty in reaching definitive action in these cases, as frequently neither the applicant for patent nor the adverse claimant is willing to take the initiative in judicial proceedings.

In the earlier cases of this kind it was ruled that upon the party out of possession should rest the *onus*, and that he should commence suit



within a reasonable time after notice, or his claim should be considered waived; but a difficulty arose in enforcing this rule in this, that possession of mining property is frequently more constructive than actual; that both parties may have the constructive possession, but neither be in the actual possession; again, both parties may be in the actual possession of and working the same lode, but at different points and under different locations and names, it not being known until development that the veins were one and the same. In such cases, both parties being in possession, the foregoing rule would of course be inapplicable.

The general rule now adopted by this office is that the *adverse claimant* shall institute the required proceedings in court, and that his failure to do so within a reasonable time, after due notice, shall be considered as a waiver of his claim; this ruling, however, being varied where, under the circumstances, its enforcement would work a manifest injustice to the adverse claimant, such cases, however, being exceptional.

Another source of difficulty exists in the fact that the diagram and notice required by law to be posted upon the claim for ninety days before survey are found insufficient to give proper information of the precise or even the approximate area and boundaries of the surface ground claimed for the convenient working of the mine; adjoining claimants being consequently unable to determine, until the final survey is actually made, whether the claim for which patent is sought conflicts with their rights or not, and when they find that such conflict actually exists, their objections are frequently presented too late for consideration, as the law limits the filing of adverse claims to the date of the approval of the survey by the surveyor general.

It is suggested as a remedy for this evil that where an application is made for a patent for either a lode or placer claim requiring survey, the applicant should be required by law to *first* cause a survey to be made of the ground so claimed, in the proper manner, by a United States deputy surveyor; that the notice and diagram be made from this survey, giving its proper metes and bounds; that *thereafter* said diagram and notice be posted and published according to law for the period of ninety days, and at the expiration of that time, *should no adverse claimant have appeared*, the surveyor general will approve the survey so made in the customary manner.

It is not perceived what reasonable objections could be offered by bona fide claimants to the adoption of the plan suggested. The survey will certainly cost the applicant no more if made *before* than after the expiration of the ninety days; and adjoining or adverse claimants will then have the opportunity of knowing, from the corner posts of the survey, as well as from the notice and diagram, precisely what ground is claimed by the applicant for patent, thus enabling them, should a conflict exist, to set forth in their adverse filings the exact extent and nature of the confliction.

### *Survey and entry of placer claims.*

The following specific instructions have been communicated in reference to this subject:

An applicant for a patent for a placer claim under the amendatory mining act of July 9, 1870, is required by law to come within the same conditions applicable to claimants of veins or lodes as prescribed by the original mining statute of July 26, 1866, and the proceedings prior to survey are the same in both cases.

After the expiration of the legal ninety days' posting and publication

of diagram and notice, proof of which must be made to the satisfaction of the register, the placer-mining claimant, when the subdivision of a 40-acre tract is necessary, may engage, under private contract, either a United States deputy, or a county or other local surveyor, to perform the work at the expense of the claimant; such 40-acre tract to be invariably laid off into four lots of equal area, either in the form of squares of ten by ten chains, or in the form of parallelograms, one side of which may be five and the other twenty chains, as will the better effect the object of the segregation; but the lines of these surveys must not be made to run diagonally to those of the regular surveys, but parallel and at right angles therewith, so as to prevent confusion in the description of the remainder of the land. Such survey must be properly sworn to by the surveyor either before a notary public, officer of a court of record, or before the register or receiver, and the deponent's character and credibility must be properly certified by the officer administering the oath.

Upon the filing of the plat and field-notes of such survey, the register and receiver will transmit the same to the surveyor general for verification and approval, who, if he finds the work to have been correctly executed, will give such 10-acre lot, *where the same constitutes the entire claim*, its appropriate numerical designation in the order of surveyed mineral claims in the township in which it is situated; and in cases where several of these 10-acre lots are contiguous and constitute *one claim*, they will not receive separate numbers for each lot, but the whole will receive *one number* in the order of surveying mineral claims in the township. The surveyor general will then mark such claim upon the original township plat on file in his office, and send an authenticated copy of the plat and field-notes of the survey to the register of the proper land office, and also to this office, as in the case of vein or lode surveys.

Thereafter, should no adverse claim have been filed, an entry will be allowed at the legal rate of \$2 50 for each acre or fractional part of an acre included in the survey; the local land officers preserving an unbroken consecutive series of numbers for all mineral entries, both of lode and placer claims; after which the case will be reported to the General Land Office, in the usual manner, for final action.

The foregoing instructions as to survey are intended to apply only to those placer claims which are upon *surveyed* lands, and cannot be entered in 40-acre legal subdivisions without interfering with the rights of other bona fide mineral or agricultural claimants on the same tract; and the local land officers are instructed in all cases to require testimony as to whether or not other claimants to any portion of the tract exist, and where such are found, to require the applicant at his own expense to cause the survey into 10-acre lots in manner aforesaid, so as to segregate his claim from the remainder; and where there are no other claimants, to require the entry to conform in its exterior limits to the 40-acre legal subdivision, in which case no further survey or plat is required.

Where there are several placer claims within the same 40-acre tract, the claimants have the option of making joint entry of the land, after proper proceedings, or of having subdivision into 10-acre lots made at their own cost, and of receiving separate patents.

When a placer claim is located upon *unsurveyed* land, a survey and plat thereof will have to be made by a United States deputy surveyor, under conditions similar to those applicable to the survey of vein or lode claims; the claimant in such case having to make a deposit sufficient to defray the expenses of the field and office work of the survey.

*Segregation of agricultural from mineral lands.*

For the guidance of the local land officers in the matter of controversies between mineral and agricultural claimants, and the segregation of agricultural from mineral lands, the following has been communicated:

The twelfth section of the amendatory mining act of 9th July, 1870, stipulates in its second proviso: "That legal subdivisions of 40 acres may be subdivided into 10-acre tracts, and that two or more persons or associations of persons having contiguous claims of any size, although such claims may be less than 10 acres each, may make joint entry thereof;" the last clause in the third proviso of said section providing that, "nothing in this section contained shall defeat or impair any bona fide pre-emption or homestead claim upon agricultural lands, or authorize the sale of the improvements of any bona fide settler to any purchaser."

The sixteenth section of this act repeals so much of the act of 3d March, 1853, entitled, "An act to provide for the survey of the public lands in California, the granting of pre-emption rights, and for other purposes," as restricts the survey of mineral lands to township lines, and provides for the extension of the public surveys over mineral as over agricultural lands; and also further provides for the subdivision, at the expense of claimants, of surveyed mineral lands into lots of less than 160 acres, which may be done by county and local surveyors.

Under the operation of this law, recognizing 10-acre lots as legal subdivisions of the public lands in mineral regions, much of the difficulty heretofore experienced in proving the mineral or non-mineral character of lands may be obviated.

Prior to the passage of this act it was necessary that affidavits should be filed as to the mineral character of *each 40-acre tract*, that being the smallest legal subdivision of public lands; and to disprove the mineral character of lands so filed upon it was necessary to establish the fact that such 40-acre tract was, as a whole, more valuable for agricultural than for mineral purposes. This it was often impossible to do, for the reason that although parties could be readily produced willing to testify that one-half or perhaps three-fourths of a given tract was only fit for agricultural or grazing purposes, yet inasmuch as a small fraction of the land was intersected by a gulch, ravine, or quartz lode yielding mineral, the value of which deposit there was no definite means of ascertaining, the deponents would be unable to testify that the entire 40-acre subdivision was of greater value for agricultural than for mineral uses.

In this way, although 30 or even 35 acres of a certain 40-acre tract might be shown to contain no mineral whatever, yet, on account of the known mineral character of the small remaining fragment of the land the bona fide agricultural claimant has been debarred from obtaining title to his claim.

Hereafter, when an application is filed at the register's office to enter land as agricultural, which has been returned as mineral by the United States deputy surveyor, or upon which affidavits have been filed alleging its mineral character, the register will, *at the expense of such applicant*, publish a notice of such application for thirty consecutive days in a newspaper of general circulation, published nearest to the land in question, or, if in a weekly paper, for five consecutive weeks, giving the name and address of the applicant; the designation of each 40-acre tract covered by the application; the names of any miners or mining companies whose claims are upon the land in question; the names



of the parties who filed the mineral affidavits and the date of such filing; and finally the notice will name a day, after the thirty days have expired, upon which a hearing will be had before the register and receiver to determine the facts as to the character of the land, when such witnesses as may be brought by the parties in interest will be examined, and their testimony reduced to writing; and the depositions of such witnesses as are unable to be present, from distance, infirmity, or other good cause, will be received and examined; after which the proceedings will be submitted to the General Land Office for review.

A copy of the foregoing notice must also be posted in a conspicuous place upon *each 40-acre tract* embraced in the application, for the period of thirty consecutive days, proof of which is required by the sworn statement of at least two witnesses, one of whom may be the applicant, stating where the notice was posted, the date of posting, and how long continued; and there is also required to be furnished a copy of the printed notice with the publisher's affidavit attached, stating when the same was first published, and for what length of time, and in every case where practicable, in addition to the foregoing publication and posting, *personal notice* must be served in the usual manner upon the parties who are actually engaged in mining upon the land, and upon those who filed the mineral affidavits.

On the day of the hearing, the register and receiver are required to examine the witnesses with the view of eliciting the truth as to the mineral or non-mineral character of the land; and where it is shown that a portion of a 40-acre tract is mineral, and the remainder agricultural, the testimony must clearly show what particular portion or portions of the land are actually covered by placer or quartz claims, or used in connection therewith, as fixed by local customs or rules of miners; and if, prior to such hearing, the respective mineral and agricultural claimants can, by agreement, define the proper boundaries of the mineral and agricultural lands in the same 40-acre tract, and file on the day of the hearing a diagram and description showing in what portions of the land such mines and grounds used in connection therewith are situated, stating whether the same are lode or placer claims, it will be of much service to the local land officers and to the General Land Office in making a proper award of the land.

Where an applicant claims the pre-emption right to the land he applies to enter, the register and receiver are required at said hearing to exact all the proof customary in cases of pre-emption contests as required by law and instructions, and the same rule is applicable to homestead applicants. After the hearing the register and receiver must forward all the papers filed and testimony taken, together with their joint opinion thereon, to the Commissioner of the General Land Office for review, when such an award of the land will be made as the law and the facts may justify, and in cases where further survey is necessary to set apart the mineral from the agricultural land in any 40-acre tract, the necessary instructions will be issued by the General Land Office to enable the agricultural claimant, at his own expense, to have the work done either by a United States deputy, county, or other local surveyor, as authorized by the sixteenth section of the act of July 9, 1870.

In making the survey in pursuance of the award by the General Land Office, where placer-mines exist upon a 40-acre tract, the subdivision must invariably be made into 10-acre lots as hereinbefore specified.

In case there exists a vein or lode-claim upon such 40-acre tract, the subdivision into 10-acre lots is not required by the act, and the survey in such case must be executed in such manner as will segregate the por-

tion of land actually containing the mine, and used as surface-ground for the convenient working thereof, from the remainder of the tract, which remainder will be patented to the agricultural claimant to whom the same may have been awarded, subject, however, to the condition that the proprietor of any vein or lode for which a patent has issued shall have the right to follow the same for the purpose of extracting and removing the ore therefrom, although it may penetrate or intersect the land so patented as agricultural.

Upon the filing of the plat and field-notes of such survey duly sworn to, the register and receiver are required to transmit the same to the surveyor general for his verification and approval; who will then mark out the same upon the original township plat in his office, and furnish authenticated copies of such plat and field-notes to the proper local land office and to the General Land Office, to be affixed to the duplicate and triplicate township plats respectively.

When a portion of a 40-acre tract is awarded to an agricultural claimant, and he causes the segregation thereof from the mineral portion, in the manner herein indicated, such agricultural portion is not given a numerical designation on the plats as in case of surveyed mineral claims, but is simply described as the "Fractional quarter of the ——— quarter of section ———, in township ———, of range ———, ——— meridian, containing ——— acres, the same being exclusive of the land adjudged to be mineral in said 40-acre tract."

The surveyor must correctly compute the area of the agricultural portion, which computation must be verified by the surveyor general.

After the authenticated plat and field-notes of the survey have been received from the surveyor general the General Land Office issues the necessary orders for the entry of the land, and in issuing the receiver's receipt and register's certificate those officers are governed by the description of the land given in the order from the General Land Office.

### *Citizenship of claimants.*

In accordance with the principles enunciated in an opinion of Assistant Attorney General Smith, and the consequent ruling of the head of the Department in accordance therewith, in the New Idria mining case, as to citizenship of mining claimants, and to which reference is elsewhere made, this office revoked the regulations heretofore in force, and issued instructions to the following effect as to the nature of the proof of citizenship to be furnished by applicants for mining titles, viz:

1. Where such application is made by persons claiming to be *native-born* citizens of the United States, the affidavit of each person so claiming is required that he is such citizen, stating the place of his birth, such affidavit to be taken before a notary public, officer of a court of record, or the register or receiver of the land office where the application for patent is made.

2. Where such application is made by a person *claiming to have filed a declaration of intention to become a citizen*, he is required to file a certified copy of such declaration under seal of the court in which it was made.

3. Where such application is made by a person *claiming to be a naturalized citizen* of the United States, he is required to present his naturalization certificate, or a copy thereof, certified under seal of the court from which the original issued.

4. Where the application is made by an incorporated company it is required to present a certificate of incorporation and evidence of the

citizenship of each member or stockholder of such company, in the manner hereinbefore set forth.

5. Where the application is made by an association of persons *unincorporated*, each member of such association must furnish proof of citizenship in the manner aforesaid.

### 23.—INSTRUCTIONS RELATIVE TO THE ASSIGNMENT OF LAND WARRANTS.

Information has reached this office that great irregularities are being practiced in the matter of procuring assignments to land warrants, by which the lawful owners thereof are induced to dispose of them at merely nominal prices; in many instances the assignments having been obtained in advance of the issue of the warrant, upon representations that it was doubtful whether the claim therefor would be allowed.

To check these practices, and protect the original warrantees as far as possible from imposition, a circular letter was addressed to the registers and receivers of the district offices, on the 9th of August last, instructing them not to receive warrants unless the assignment was indorsed upon the back thereof, except in cases where the space had already been filled by previous assignments. In such cases the last assignment is required to show, beyond question, that at the time of its execution the assignor had the warrant in his lawful possession. The salutary effect of these instructions is already seen, not only in the returns of the district land officers, but in the diminished number of warrants of the class referred to which come before this Bureau for approval.

### 24.—REORGANIZATION OF THE CLERICAL FORCE OF THE OFFICE AND APPOINTMENT OF SPECIAL AGENTS.

When the vast extent of the public domain is taken into consideration, and when the teeming population that at no distant day must people it is anticipated; and when it is remembered that to each and every tract on which a home may be made, and that even to the very lands on which many towns and cities have been or may hereafter be built, the validity of title rests primarily in the accuracy with which the first details of transfer from the Government to its vendees are executed; the importance of exercising critical care in the adjustment of all matters pertaining to the disposal of public lands should be apparent.

There is not a home in many of the States in the prosperous valley of the Mississippi, nor in the rapidly-growing regions beyond that river, that does not depend upon the records of this Bureau for evidence to complete the chain of title by which it is held. Even from those regions of the west which have been peopled for the greatest length of time, this office is in constant receipt of applications for certified transcripts of records affecting the validity of title to lands which for ten, twenty, and even fifty years have been under cultivation.

Were every acre of land now owned by the Government sold or otherwise disposed of, there would still be ample necessity for the perpetuation of this Bureau, with a clerical force by no means small, to afford information and papers respecting the original transfer of title from the Government. In many instances the necessity for these transcripts of records arises from errors and inadvertences either in the construction of laws or in the execution of the details of transfer, both of which inevitably lead to expensive and protracted litigation.

With a view to prevent, as far as may be possible, the further occurrence of such cases, I am impelled to call your attention, with the hope that proper legislation to meet the case may be invoked, to the great importance of placing within the reach of this Bureau the means of se-



curing such clerical aid as may be equal to a proper adjustment of the important questions constantly arising before it.

It is now a difficult task to procure and *retain* clerks that can be profitably employed on the more important branches of the work of the office; and I may add that the difficulty of retaining far exceeds that of securing them, for the reason that the utterly inadequate salaries now paid by the Government too often fail to induce the more competent clerks to remain in the Bureau after becoming fully conversant with the laws and departmental rulings relating to our land system, there being always more advantageous opportunities to exercise that knowledge in legitimate pursuits outside of the office at rates of compensation with which the Government under existing laws cannot compete.

The statutory laws relating to public lands are necessarily complicated. In the construction to be placed upon them and in the adjustment of adverse claims arising under different laws, the questions of title upon which we are called to pronounce decision are sufficiently intricate to demand the best legal ability. The interests at stake are almost invariably of great moment, in most cases involving the lawful and peaceable possession and enjoyment of the lands of men struggling through poverty to secure by hard industry for themselves and families a home. To meet these questions in a proper manner, competent clerks should be employed, and this can only be done when a more liberal legislation in the matter of compensation is accorded.

The heads of the various divisions of the Bureau are charged with a responsibility second only to the head of the Bureau, and should in my opinion receive a salary of not less than \$2,500 per annum. The number of clerks of the fourth class should be increased, and to equalize it a proportionate number could be taken from the clerks of the first class. I am the more inclined to make this recommendation when I consider that not only will the work be better done under a reorganization like this, but there will be an actual economy of time and money by the avoidance of errors in the performance of the work.

In the offices subordinate to the General Land Office—the offices of surveyors general, registers of district land offices and receivers of public moneys—a growing necessity exists for some new system by which a more direct control can be had of the details of business pertaining to those offices and by which any irregularities may be corrected. It is a matter due alike to the public at large and the officers concerned. A constant source of annoyance is found in the frequent complaints alleging official malfeasance on the part of the land officers, which come to us from every part of the country where the land system extends. It is but just to say that in many instances these complaints emanate from designing men or disappointed speculators, and are often utterly groundless when subjected to investigation. They nevertheless come to us in such grave shape as to require the time, trouble, and expense of formally recognizing and investigating them. On the other hand, the charges are often well founded in fact, and the protection of the parent office is invoked to prevent practices oppressive to the people and subversive of law. In either case the facilities of this Bureau should be sufficient to enable it to acquit its subordinates of charges when wrongfully made, or to fasten upon them the evidence of their malfeasance where they have been rightfully accused of such action.

Under present statutory provisions there is no adequate method by which satisfactory investigations can be made. It is true that a register can be called upon to report as to the alleged misconduct of a receiver, or *vice versa*; but the official relations of those officers are generally such as to render these investigations unreliable. Even when a special

agent is delegated to examine into alleged misconduct, which can only be done at great inconvenience and expense, he finds himself embarrassed by his want of authority to compel the attendance of witnesses. What is needed, and for which I respectfully ask, is the authority to appoint one or two special agents to be constantly in the employ of this Bureau, who may become familiar with the land laws and regulations, and who shall, subject to orders from this office, visit the different land districts with a view to examine into and report upon the manner in which the business is conducted. A salary of \$2,500 should in my opinion be affixed to such office, and, in addition, the actual expenses of the agent while on duty should be borne. It is a system not new to other Departments of the Government, and is believed to have been productive of a salutary effect in its workings.

That such a system, if adopted in connection with the administration of the affairs of the Land Bureau, would result in subserving a good purpose I have no doubt. Not only would the General Land Office be kept in closer *rapport* with the district officers; the officers be afforded an opportunity of explaining any false charges which might be brought against them; the people secured in their rights against the unlawful acts of bad officers; but a great desideratum would be attained in having some one to superintend the removal of district offices, the opening of new offices, and the giving of instructions to officers, when, without previous experience, they are appointed to those positions—matters which have from the foundation of the Government to the present time been productive of great hindrance to the smooth and correct working of the land system.

In changes of the officers referred to, which are frequent, the new appointees in a majority of cases bring to the discharge of their duties no experience or previous knowledge of such duties. From the very first day of their official life a pressure of business is perhaps forced upon them, compelling them to decide on cases, or to render a construction of law, which, if erroneously done, may invalidate the title to hundreds of homesteads and prejudice the rights of hundreds of citizens. The details of business, so necessary to dispatch and correctness, are to be learned only by long experience; and, before that is acquired, untold numbers of almost inextricable complications may have been made. The result is seen in the mass of cases that burden our files and consume the time of the office, a great portion of which could have been avoided if this office had possessed the facilities for sending competent persons to the spot to instruct the officers and start the machinery of their offices aright.

In the correction of the evils alluded to by the appointment of special agents as herein asked, the Government would save a very large amount over the appropriation necessary to meet the expenses, while the saving, both of money and trouble, to the public would be probably still greater.

Respectfully submitted.

WILLIS DRUMMOND,  
*Commissioner.*

The Hon. SECRETARY OF THE INTERIOR.

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*A.—Report of the surveyor general of Florida.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Tallahassee, Florida, September 25, 1871.

SIR: I have the honor, in compliance with instructions, to submit the following report of surveying operations in this district during the fiscal year ending June 30, 1871, together with tabular statements of office and field work.

The surveys during the past year have been prosecuted in regular order, as proposed, to the extent of the appropriation therefor.

On the 16th of November last I contracted with Deputy Josiah H. Stearns for the survey of fifteen townships, reaching from the south boundary of the survey of Deputy J. W. Childs to the Caloosahatchee River, namely, townships 39, 40, 41, 42, 43 south, of ranges 27, 28, 29 east. The deputy took the field about the middle of December following and returned his work the 20th of May. The office-work was completed, and the duplicate plats and transcribed field-notes, with account of deputy, forwarded to the General Land Office on the 28th of June.

On the 18th of November, 1870, I contracted with Deputy James D. Tannehill for the survey of thirteen townships, reaching from the previous survey of J. D. Stanbury, deputy surveyor, to the Caloosahatchee, and from the contract of J. H. Stearns, deputy surveyor, to the Okeechobee Marsh, namely, townships 39, 40, 41, 42 south, range 30 east; townships 40, 41, 42 south, range 31 east; townships 39, 40, 41, 42 south, range 32 east; and townships 39, 40 south, range 30 east. The deputy was detained by jury duty in the United States court then sitting at Jacksonville, so that he was unable to take the field until early in February following. He made return of his work on the 23d of June, his time having been extended thirty days beyond the date set in his contract, as was also done in the case of Deputy J. H. Stearns. The office-work was completed, and the duplicate plats and transcribed field-notes, with deputy's accounts, were forwarded to the General Land Office on the 11th September. The greater time taken to work up this contract than the preceding one was in consequence of less clerical force in the office.

I next contracted on the 24th of April, 1871, with Deputy Marcellus A. Williams for the survey of four townships on and near the Atlantic coast, east of Lake Okeechobee, namely, township 45 south, ranges 41, 42, 43 east, and township 46 south, range 41 east. Township 45 of ranges 42 and 43 had been embraced in the previous contract of Messrs. Gleason and Williams, but they had not surveyed them, having reached and passed the estimated number of miles in their contract before coming to them, in consequence of the unusually large quantity of meanders in the coast townships. At their request the unexecuted portion of their contract was canceled and re-contracted, as already stated, to Mr. Williams, with two additional townships. He met with a misfortune on Lake Worth, being obliged to beach his boat in a storm, thus losing the greater part of his provisions. He still attempted to execute his contract by packing his stores on mules, but the summer rains being unusually heavy rendered that region of country impracticable, and he was compelled to abandon the work for the season. At his request his time has been extended to the 1st of next March.

A full account of deposits made during the year for special surveys is given in document E herewith, and it is unnecessary to recapitulate them here, except to say that the apparent delay in contracting these surveys is not the fault of this office, but of the parties interested, contract having in each instance been offered to surveyors named by those parties, but not yet accepted.

In Document C I again report the four unclosed contracts from before the rebellion of Jas. D. Galbraith, John B. Kilgore, Ramon Canova, and William Mickler. As these contracts are practically dead, I would suggest the propriety of canceling them, leaving open any unsettled questions as to payment for work executed. Or, at any rate, as it appears scarcely necessary to repeat the report of them unchanged year after year, I would request to be permitted to drop them hereafter from my reports.

The portion of country embraced within the surveys of the past year is much the same as that surveyed the year previous, improving in quality, however, as you approach the Caloosahatchee River. There is considerable first-rate hummock bordering said river, with good pine and prairie lands back of it. The great disadvantage, however, is the liability of the land to periodic overflows from the river. But it is my opinion that when the State becomes sufficiently settled to make those lands desirable it will not be found impracticable to reclaim them by a system of drainage, and that among them, when thus reclaimed, will be found some of the best lands in the State. In its present condition the land is valuable for grazing but not for cultivation.

Accompanying this report are the following documents:

- A.—A diagram, showing the progress of surveys.
- B.—A report of surveying operations in the district during the past fiscal year.
- C.—A statement of the present condition of contracts not closed at date of last report.
- D.—A report of plats furnished the district land office.
- E.—A report of deposits for special surveys.

Submitting the above report to your consideration, I remain, very respectfully, your obedient servant,

M. L. STEARNS,  
Surveyor General.

HON. WILLIS DRUMMOND,  
Commissioner General Land Office, Washington, D. C.



B.—Report of surveying operations in the district of Florida during the year ending June 30, 1871, showing the present condition of contracts made date of last annual report.

Names of deputies.	No. of contract.	Date of contract.	Kind of work.	LOCALITY.		Time allowed.	When returned.	When forwarded.	No. of miles.	Remarks.
				Tp. south.	R. east.					
Josiah H. Stearns...	4	Nov. 16, 1870	Subdivision...	39, 40, 41, 42, 43	27, 28, 29	May 1, 1871	May 20, 1871	June 28, 1871	M. Cl. 810 56, 87	Time extended to May 31. Closed.
Jas. D. Tammhill...	5	Nov. 18, 1870	Subdivision...	39, 40, 41, 42, ... 40, 41, 42, ... 39, 40, 41, 42, ... 39, 40, 41, 42, ... 39, 40, 41, 42, ... 45, ... 46, ...	30 31 32 33 41, 42, 43 41	June 1, 1871	June 23, 1871	Sept. 11, 1871	637 78, 15	Time extended to July 1. Closed.
M. A. Williams....	6	April 24, 1871	Subdivision...	45, ... 46, ...	41, 42, 43 41	Sept. 1, 1871	.....	.....	.....	Work interrupted by losing supplies on Lake Worth in a storm.
Charles F. Smith....	7	April 29, 1871	Private claim.	"Dupont's Hummock"	"	Aug. 1, 1871	.....	.....	.....	Time extended to March 1, 1872. Time extended to January 1, 1872.

Respectfully submitted.

M. L. STEARNS, Surveyor General.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Tallahassee, Florida, September 25, 1871.

C.—Statement showing the present condition of contracts not closed at date of last annual report.

Names of deputies.	No. of con- tract.	Date of con- tract.	Kind of work.	LOCALITY.		Time allowed.	Miles sur- veyed.	Remarks.
				Tp. south.	R. east.			
James D. Galbraith.....	.....	Nov. 10, 1858	Subdivision.	34, 35..... 36, 37.....	24, 25..... 25.....	April 10, 1859. Extended April 10, 1860.	<i>M.</i> 122 1.38	Townships 36, 37 south, range 25 east, sent to Com- missioner September 11, 1860. Township 34 south, range 25 east, sent to Commissioner No- vember 13, 1869. Balance of work not returned. Contractor deceased.
John B. Kilgore.....	.....	Oct. 23, 1859	Subdivision.	37..... 32.....	26, 27, 28, 29, 30 27.....	May 1, 1860 .....	95 73.64	Township 32 south, range 27 east, forwarded May 31, 1860. Township 37 south, range 27 east, (east half) forwarded in 1860. Balance of con- tract never expected.
Ramon Canova.....	.....	Oct. 26, 1860	Subdivision.	41, 42, 43, 4..... 40, 41, 42, 43..... 41, 42.....	25..... 26..... 27.....	.....	118 68.73	Contract not on file. Townships 42, 43, 44 south, range 25 east, forwarded December 1, 1869. Balance of contract not executed prior to Jan- uary 10, 1861.
William Miekler.....	.....	Dec. 5, 1860	Subdivision.	41, 42, 43, 44.....	22, 23, 24.....	March 15, 1861 .....	.....	Did not take the field prior to January 10, 1861. No return made.
James D. Stanbury ..	2	Dec. 3, 1869	Subdivision.	36, 37, 38..... 39.....	31, 32, 33..... 31.....	May 1, 1870, Extended to June 15, 1870.	498 27.65	Forwarded September 13, 1870. Closed.
Wm. H. Gleason and M. A. Williams.	3	Feb. 25, 1870	Subdivision.	45..... 46, 47..... 48, 49..... 50, 51, 52.....	42, 43..... 43..... 41, 42, 43 41, 42.....	Sept. 1, 1870. Extended to Oct. 15, 1870.	625 55.98	Forwarded December 7, 1870. Township 45 south, range 42, 43 east, not surveyed, but re- contracted to M. A. Williams in his contract of April 24, 1871. Closed.

Respectfully submitted.

UNITED STATES SURVEYOR GENERAL'S OFFICE.

Tallahassee, Florida, September 25, 1871.

M. L. STEARNS, Surveyor General.

## D.—Report of plats furnished the district land office during the year ending June 30, 1871.

Township south.	Range east.	When furnished.	Remarks.
1.....	27	July 23, 1870	Section 55. Private claim. Andrew Atkinson.
52.....	41	Dec. 31, 1870	Survey of Gleason and Williams. Contract No. 3.
48, 49, 51, 52.....	42	Jan. 14, 1871	Section 6. Amended subdivision.
46, 47, 48, 49, 50.....	43		
5.....	26		

Respectfully submitted.

M. L. STEARNS,  
*Surveyor General.*

UNITED STATES SURVEYOR GENERAL'S OFFICE, Tallahassee, Florida, Sept. 25, 1871.

## E.—Report of deposits made by individuals for special surveys during the year ending June 30, 1871.

Depositors.	Deposits.			Surveys.	Remarks.
	Amount.	Place.	Date.		
John Westcott, in name of M. L. Stearns ..	Field-work. \$75 00 Office-work. \$60 00			Claim of Clark and Atkinson, 2,000 acres in Dupont's or Dixon's Hummock.	Certificate of deposit not in possession of this office. Being directed to proceed without them, (Commissioner's letter of May 25, 1871) the survey was contracted for the 29th April, 1871, but not yet returned. Not yet contracted.
A. H. Alexander.....	30 00	U. S. A. T. Charleston.	Sept. 23, 1870.	Section 15, T. 17 S., R. 29 E.	
G. W. Marshall.....	15 00	U. S. A. T. Charleston.	Jan. 25, 1871.	Two islands in Lake Harris.	Application withdrawn and deposit returned, as per account rendered April 17, 1871.
J. A. Macdonald.....	30 00	U. S. A. T. Charleston.	March 13, 1871.	Section 18, T. 16 S., R. 29 E.	Not yet contracted.

Respectfully submitted.

M. L. STEARNS,  
*Surveyor General.*UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Tallahassee, Florida, September 25, 1871.



*B.—Report of the surveyor general of Louisiana.*

OFFICE OF SURVEYOR GENERAL, DISTRICT OF LOUISIANA,  
New Orleans, September 25, 1871.

SIR: In compliance with your instructions, I have the honor to submit my annual report, in duplicate, with accompanying tabular statements and map explanatory thereof.

Tabular statements herewith transmitted are as follows:

A.—Complete list of surveying contract let by this office since June 30, 1870, to date.

B (Extract from A.)—List of contracts let during the fiscal year ending June 30, 1871, which are payable out of special deposits made by interested parties.

C.—List of contracts let during the fiscal year ending June 30, 1871, which create a liability against the appropriation of \$10,000 made by act of Congress approved July 15, 1870.

CC.—List of contracts let during the fiscal year ending June 30, 1871, creating a liability against the appropriation of \$12,240, made by act of Congress approved March 3, 1871.

D.—List of proposed surveys for the year ending June 30, 1873.

E.—An estimate of appropriations necessary for the fiscal year ending June 30, 1873.

F.—List of deputy surveyors appointed by the surveyor general of Louisiana.

G.—Map of Louisiana, showing the progress of surveys in this State.

H.—A complete list of all certificates of location issued by this office under the third section of the act of Congress approved June 2, 1858.

The surveys described in the contracts contained in Table B have been executed and approved, and the maps have been transmitted to the proper officers in accordance with laws and instructions.

The surveys described in the contracts contained in Table C are now being executed. The extraordinary rains that have continued during the entire season have greatly retarded Mr. Hanke in his work, and he has been driven from the field to await the subsiding of the flood many times. He is, however, now at work again with a fair prospect of soon completing his labors.

The contract of Messrs. Ross and Sulakowski for the survey of the townships in which the city of New Orleans is situated, has been pushed forward with much vigor and zeal. Fractional township 13 south, range 11 east, has been completed, and the notes have been returned to and are now under examination by this office. These gentlemen, and especially Colonel Sulakowski, are entitled to much credit for their patient, laborious researches in ferreting out and collecting together the necessary information in order to complete this most important and difficult survey.

In the list of proposed surveys, (Table D,) the necessity of the townships enumerated has been fully explained to you in communications made by my predecessors, excepting in the townships marked "original surveys." These townships are generally inhabited by settlers who are urgent for surveys to be made. The lands are described as high and suitable for cultivation. Township 10 south, ranges 11 and 12 west, are near the Calcasieu sulphur mines, and the attention of individuals as well as of corporations is being called to that section of country with considerable enthusiasm, on account of the extraordinary and astonishing deposits of that mineral, lately discovered in such purity, imbedded in the earth. Considerable emigration is also being attracted toward this part of the country on account of the extension of the New Orleans and Texas Railroad.

The surveys proposed in southeastern district, especially those bordering upon the Gulf and Barataria Bay, are reported as in great part high, arable land, and desirable for homesteads. The new surveys proposed in northwestern district is a continuation of the survey of land formerly covered with shallow lakes, and which are reported as having within a few years become dry by drainage caused by the continued abrasion of the lower end of the Red River raft.

*Estimates.*—In explanation of the increase of my estimate over that of last year, in the item of salary for clerical force in the office of surveyor general, I submit:

1. The increase estimate for field surveying.

2. The many surveys to be made under the act of May 30, 1862, and March 3, 1871, of that class of lands which appears upon the approved maps as "private land claims, not confirmed." This class of claims has always been placed upon the maps during the progress of public surveys, not in recognition of their title or validity, but to show their boundaries for the information of the Land Office. The instructions of the Commissioner to the register and receiver at New Orleans, of August 5, 1870, permit homestead applications upon these lands under certain restrictions and provisos; and if upon investigation it be discovered that the claimants have no claim to the land, then the homestead applicants must make a deposit for their surveys as public land, as above stated. This will add materially to the labor of this office, not only in the making the survey and plat of the land, but in furnishing the Land Office with information in

regard to the title to the land. There has already been a number of applications made for homestead entry under the instructions referred to, and the amount of labor may be estimated from the number and amount of land thus claimed, which is as follows:

## UNCONFIRMED PRIVATE LAND CLAIMS.

	Acres.
Southeastern district, 120 claims .....	18, 132. 05
Southwestern district, 80 claims.....	20, 178. 31
Greensburgh district, 77 claims.....	38, 133. 00
Northwestern district, 11 claims.....	4, 701. 01
Making a total of.....	81, 144. 37

3. Another item of work peculiar to this office is the issuance of certificates of location in lieu of private land claims which are unlocated, under the third section of the act of June, 1858. Estimating the amount of labor devolving upon this office under this law, I beg leave to quote from the letter of Surveyor General William J. McCulloh to the Commissioner, under date March 15, 1860. He writes:

"There are claims confirmed by general laws *which are not yet located* :

In Greensburgh district.....	1, 017
In southeastern district.....	295
The other districts.....	212
Total .....	1, 524

"Private research and my own official investigation are each day disclosing the proper location of some of these claims; but very frequently when so ascertained it becomes manifest their position has been preoccupied. It is therefore impossible to estimate what proportion of them may finally be surveyed; but if they are not thus satisfied, the issue of certificates of relocation under the act of 2d June, 1858, for very many of them (while it will avoid field-work) may demand of the office equal time and labor.

"It is impossible to say what labor may be imposed upon this office by the third section of the act of June, 1858. To do so will first require the ascertainment of how many of the confirmed claims there are for which surveys cannot be made and for which parties can establish their rights to the issue of the contemplated certificates of relocation; and the latter fact would also have to become known with regard to the thousands of conflicts which exist between confirmed claims, and the multiplicity of deficiencies between their surveyed and confirmed areas. For these conflicts and deficiencies equally constitute demand for the issue of certificates of location under the terms of the act mentioned."

4. Deputy surveyors, previous to commencing their field-work, must first be supplied from this office with transcripts of all records which are deemed necessary to complete their work. They are always furnished with a list of confirmed private land claims, supposed to be located in their townships; copies of all previous surveys, maps, and field-notes; and when in the field they are frequently asking for special instructions in relation to particular private claims, which, in location, seem to conflict often with their confirmation. The preparation of these instructions, and furnishing to courts, attorneys, private surveyors, and individuals with copies, &c., demands the constant attention of a most experienced and capable man in this office, and I have been compelled to employ extra clerical force at my own private expense to supply the wants of citizens with information thus sought.

5. The preparation of plats for private land claims entitled to patent under the act of December 22, 1854, requires considerable labor, which may be estimated from the following figures:

Number of confirmed private land claims which have been surveyed in Louisiana, and which are entitled to patent .....	7, 640
Number for which patent plats have been furnished to this date.....	1, 460
Leaving the number of claims for which plats are to be prepared in triplicate..	6, 180

These plats are generally made at the request of interested parties, and hence the seeming delay in not having them heretofore completed.

## UNFINISHED OFFICE-WORK.

In addition to the amount of the office labor above detailed, and which is absolutely required to be executed by the surveyor general and the clerks in his office, as current business, there is a large amount of unfinished work which has been long in arrearage, to which your attention is invited, and I again beg leave to quote from the surveyor general's letter above referred to, and to the map accompanying the same, by which it will appear "that transcripts of the notes of 784 townships are to be made out and sent

up to the Department," the General Land Office having no records or copy of the resurveys and very few of the original surveys in the same. "The surveys have occurred almost entirely where the townships are covered by claims, hence the notes are very full and lengthy. I do not think the most rapid penman could, on an average, transcribe more than six per month."

In allusion to other unfinished work of this office, I also invite your attention to the report of Surveyor General Boyd, in his annual report of 1849, (see Land Office report 1859, page 316.) Mr. Boyd writes: "Upon examination of the township maps in this State, I have perceived that many of them have been approved by the surveyor south of Tennessee after the date of the act of Congress establishing the office of surveyor general. In the case of *Jourdan et als. vs. Barrett et als.*, (4th vol. Howard, page 169,) the Supreme Court of the United States have, in substance, declared that, after the 3d March, 1831, the surveyor south of Tennessee had no powers to approve a survey. This is a subject of so much importance that I think Congress should be called upon to pass a law legalizing the acts of surveyor south of Tennessee, so far as the date of his official signature was concerned."

The multiplicity of lawsuits growing out of the confliction in the location of private land claims in many of the townships, the official maps of which are thus deemed invalid, requires some action, and, it seems to me, re-examination of the surveys; and if found correct, a reapproval and a reprotraction of the maps will quickly settle a vexed question.

#### INDICES.

Soon after assuming the duties of this office, (April 1, 1871,) I discovered that no general index of the surveys of this State had ever been kept, and that but very few of the original notes had been recorded. The only reference by which the field-notes of a survey can be ascertained is the certificate upon the township map, and as quite a number of these maps are missing, it is extremely difficult to determine in some cases which is the latest survey. To overcome this evil, and to ascertain what maps are missing from the office, I am now preparing an index of all surveys that have heretofore been made; but as but little time can be spared upon the work, for want of sufficient clerical force, it progresses but slowly.

#### CONTINGENT FUND.

In my estimate for contingent fund it will be noticed I require some additional appropriation over that of last year. This is principally for the purpose of having some of the important record-books of this office rebound. During the war the records of this office were transported over the country, and were greatly damaged by becoming wet and soiled by exposure to weather. The record-books containing the original reports of land commissioners, and the early Spanish surveys, &c., are in extremely dilapidated condition, and require to be rebound, to save from early destruction. The estimate is regarded as very reasonable.

#### UNAPPROVED SWAMP SELECTIONS.

During the period of time from 1856 to 1861 a large amount of land was selected by this office upon the affidavits of individuals, as accruing to the State of Louisiana, under the act of March 2, 1849, as swamp lands. A considerable quantity of the lands thus selected, I am informed, remains unapproved by the Secretary of the Interior; much of these lands is represented to me to be high and arable, and not subject to overflow, and is at this time occupied by settlers who are patiently awaiting the action of the Department, so that they may obtain a title to their homes. I have letters from most trustworthy sources and information given in person, urgently requesting that these "swamp lists" be definitely rejected, so that they, the settlers, may apply under the provisions of the homestead law for entry at the United States Land Office. I invite your attention to this matter, and would respectfully recommend a re-examination of the surveyor's field-notes, and in some cases re-examination in the field.

I have the honor to be, very respectfully, your obedient servant,

E. W. FOSTER,  
Surveyor General, Louisiana.

Hon. WILLIS DRUMMOND,  
Commissioner General Land Office, Washington, D. C.



A.—*Tabular statement of surveying contracts from June 30, 1870, to June 30, 1871, and contracts since issued.*

Date of contract.	Names of contractors.	District.	Number of miles (estimated).	Price per mile.	Amount.	Remarks.
July 13, 1870	Robert Boyd.....	North of Red River.....	.....	.....	.....	Survey of Islands Nos. 100 and 101. To be paid by parties interested. (See Statement B.)
July 21, 1870	W. H. R. Hangan.....	Southwestern.....	25	\$10	\$250	See Commissioner's letter of August 5, 1870. (See Statement C.)
Dec. 24, 1870	M. Hauke.....	do.....	230	8	2,000	Surveyor now in the field. (See Statement C.)
June 6, 1871	W. H. R. Hangan.....	do.....	100	800	80,000	Survey of Sabine military reservation. (See Statement C. C.)
June 7, 1871	W. R. Ross and V. Sulakowski.....	Southeastern.....	315	35	11,025	New Orleans Township, surveyors in the field. (See Statement C. Notes of township 13 south, range 11 east, returned and on examination in the office. \$8,000 to be paid by the United States and \$3,025 by the city of New Orleans.)
June 26, 1871	B. B. Bristol.....	Northwestern.....	.....	.....	.....	Survey of Wilson's Point, in township 20 north, range 16 west. (See Statement B.) Returned and approved.
July 17, 1871	J. P. Parson.....	do.....	200	8	1,600	Partly surveyed—surveyor now in the field.
Aug. 8, 1871	A. G. Foster.....	Southeastern.....	15	8	120	Canceled. (See Commissioner's letter of August 30, 1871.)
Aug. 8, 1871	W. D. Duke.....	do.....	.....	.....	.....	The surveyor having been sick, the time for the contract is extended to January 1, 1872.
Aug. 19, 1871	W. Sulakowski.....	do.....	.....	.....	.....	To be paid by parties interested. Suspended. (See Commissioner's letter of September 1, 1871.)
Aug. 24, 1871	Robert Boyd.....	do.....	75	8	600	Survey of township 8 south, range 3 east, southeastern district, east of river.

E. W. FOSTER, *Surveyor General, Louisiana.*SURVEYOR GENERAL'S OFFICE, *New Orleans, Louisiana, September 25, 1871.*B.—*Statement of surveying contracts made, under section 10 of act of Congress of May 30, 1862, on the 30th June, 1871.*

Date of contract.	Names of contractors.	District.	Amount deposited—		Amount paid for—		Balance refunded to parties.	Remarks.
			With United States Asst. Treasurer.	By—	Survey.	Office work.		
July 17, 1870	Robert Boyd.....	North of Red River..	\$180 00	John O'Malley...	\$144 00	\$30 00	\$6 00	Survey of Islands Nos. 100 and 101. Returned and approved.
June 20, 1871	B. B. Bristol.....	Northwestern.....	100 00	Thomas Pitts...	40 85	25 00	34 15	Survey of Wilson's Point, in township 20 north, range 16 west. Notes returned and sent to General Land Office.

E. W. FOSTER, *Surveyor General, Louisiana.*SURVEYOR GENERAL'S OFFICE, *New Orleans, Louisiana, September 25, 1871.*

C.—*Tabular statement of surveying contracts in Louisiana for the fiscal year ending June 30, 1871, to be paid out of the appropriation of \$10,000, approved July 15, 1870, by act of Congress.*

Date of contract.	Names of contractors.	District.	Estimated number of miles.	Price per mile.	Amount of liabilities.	Remarks.
July 21, 1870	W. H. R. Hangen.....	Southwestern.....	25	\$10	\$250 00	Canceled. (See Commissioner's letter of August 5, 1870.) Survey of townships 8 and 9 south, range 1 west; township 10 south, ranges 2 and 3 west. New Orleans township, townships 12 and 13 south, range 11 east; southeast district, east of river.
Dec. 24 1870	Maurice Hauké.....	.....do.....	250	8	2,000 00	
June 7, 1871	W. R. Ross and V. Sulakowski.	Southeastern.....	315	35	8,000 00	

E. W. FOSTER, *Surveyor General, Louisiana.*

SURVEYOR GENERAL'S OFFICE, New Orleans, Louisiana, September 25, 1871.

CC.—*Tabular statement of surveying contracts in Louisiana for the fiscal year ending June 30, 1871, to be paid out of the appropriation of \$12,240, approved by act of Congress of March 3, 1871.*

Date of contract.	Name of contractor.	District.	Estimated number of miles.	Price per mile.	Amount of liabilities.	Remarks.
June 6, 1871	W. H. R. Hangen.....	Southwestern.....	100	\$8	\$800 00	Survey of military reservation on Sabine River.

E. W. FOSTER, *Surveyor General, Louisiana.*

SURVEYOR GENERAL'S OFFICE, New Orleans, Louisiana, September 25, 1871.

## D.—Proposed surveys in the State of Louisiana for the fiscal year ending June 30, 1873.

District.	Description of townships or parts of townships.	Estimated number of miles.	Price per mile.	Amount of contract.	Total amount of proposed surveys per district.	Remarks.
Southwestern.	Township 3 south, range 3 east.....	160	\$8	\$1,250 00	.....	Detailed in surveyor general's letter to Commissioner, dated October 23, 1854.
	Township 6 south, range 2 east.....	125	8	1,000 00	.....	To complete the resurveys of surrounding townships.
	Townships 6 and 7 south, range 5 east.....	200	8	1,600 00	.....	To complete the resurveys of surrounding townships.
	Township 15 south, range 7 east.....	30	8	240 00	.....	Necessity explained in surveyor general's report, dated August 25, 1855.
	Townships 11 and 12 south, range 6 east.....	50	8	400 00	.....	Survey of section lines of public lands through Lake Tasse, under decision of Commissioner, dated September 18, 1857.
	Township 13 south, range 6 east.....	10	8	80 00	.....	Necessity explained in annual report of 1858.
	Townships 9 and 10 south, range 13 west.....	100	8	800 00	.....	Necessity explained in surveyor general's letter of August 25, 1855.
	Township 10 south, ranges 11 and 12 west.....	150	8	1,200 00	.....	Original survey being reported as high lands belonging to the United States.
	Township 12 south, ranges 1 and 2 west.....	125	8	1,000 00	.....	Original survey being reported as high lands belonging to the United States.
	Township 11 south, range 8 west.....	100	8	800 00	.....	Original survey being reported as high lands belonging to the United States.
Southeastern, east of river.	Township 11 south, ranges 2 and 3 west.....	100	8	800 00	.....	Necessary to complete the contract of Theodore Gillespie of March 18, 1858. Maps approved November 12, 1860.
	Township 9 south, ranges 8 and 9 east; township 7 and 8 east; township 11 south, ranges 7 and 8 east.	160	8	1,250 00	\$9,200 00	
Southeastern, west of river.	Township 15 south, range 24 east; township 16 south, ranges 24 and 25 east; township 20 south, ranges 29 and 30 east.	225	8	1,800 00	.....	Given under contract of February 1, 1859. Expired. No returns. Contract sent to General Land Office February 3, 1859.
	Township 12 south, range 14 east 30 miles; township 13 south, range 12 east 10 miles; township 14 east 30 miles; township 15 south, range 13 east, south of Bayou Lafourche.	240	8	1,920 00	.....	Proposed in estimate of former surveyor general.
	Partial surveys: Township 18 south, ranges 16, 18, 20, and 21 east; township 19 south, ranges 16, 17, 19, to 28, inclusive; township 20 south, ranges 19 to 30, inclusive; township 21 south, ranges 15 to 30, inclusive.	375	8	3,000 00	.....	Enumerated in list accompanying report of H. C. De Abna, special agent, February 1, 1867.
					8,000 00	



Northwestern..	Connections of the section lines with the exterior boundaries of Las Ormiges and La Nana grants in township 5 north, ranges 11, 12, and 13 west; township 6 north, ranges 10, 11, 13, and 14 west; township 7 north, ranges 10, 11, and 12 west; township 8 north, ranges 11, 12, 13, and 14 west; township 9 north, ranges 11 and 12 west; township 10 north, ranges 12 and 15 west; township 11 north, ranges 11, 12, 13, and 14 west. Township 7 north, range 10 west, (fractional).....	225	8	1,800 00	.....	Proposed in previous estimates.
		30	8	240 00	.....	Fort Jesup reservation. Commissioner's letter dated August 29, 1871.
		.....	.....	2,000 00	.....	
					4,040 00	
					21,240 00	
	Total amount of proposed surveys .....					

SURVEYOR GENERAL'S OFFICE, New Orleans, Louisiana, September 25, 1871.

E. W. FOSTER, Surveyor General, Louisiana.

*E.—Estimate of funds to be appropriated for the fiscal year ending June 30, 1873, for surveying in Louisiana, for compensation of the surveyor general and the clerks in his office, and for contingent expenses of the surveyor general's office.*

## PROPOSED SURVEYS.

Southwestern district.....	\$9,200 00
Southeastern district.....	8,000 00
Northwestern district .....	4,040 00
	<u>\$21,240 00</u>

## SALARIES.

Salary of surveyor general .....	2,000 00
Salary of chief clerk.....	1,800 00
Salary of one draughtsman.....	1,200 00
Salary of one protractor and calculator.....	1,200 00
Salary of two recording clerks.....	2,100 00
	<u>8,300 00</u>

## CONTINGENT EXPENSES.

Stationery, furniture, postage, book-binding, freight, servants' hire, &c .....	3,000
	<u>3,000 00</u>

Total amount of appropriation required for the fiscal year ending June 30, 1873.....	<u>32,540 00</u>
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E. W. FOSTER,  
*Surveyor General, Louisiana.*

SURVEYOR GENERAL'S OFFICE,  
*New Orleans, Louisiana, September 25, 1871.*

*F.—List of deputy surveyors appointed by the surveyor general of Louisiana.*

Names.	Date of oath.	Residence.	How employed.
W. H. Williams.....	Aug. 28, 1869	Carrollton .....	Not employed.
Robert Boyd.....	Nov. 8, 1869	New Orleans..	Contract in the southeastern district, east of river.
W. W. Todd.....		Jefferson.....	Not employed.
Washington H. R. Hangen.....	July 21, 1870	Mandeville .....	Contract in the southwestern district.
Maurice Hauké.....	Dec. 19, 1870	Houma .....	Do.
M. Robinson.....	May 22, 1871	New Orleans..	
William R. Ross.....	June 7, 1871	.....do .....	Contract of New Orleans Township.
Valerian Sulakowski.....	June 7, 1871	.....do .....	Do.
Addison J. Foster.....	June 21, 1871	.....do .....	
Byron Pradley Bristol.....	June 26, 1871	Shreveport .....	Survey in the northwestern district.
John P. Parson.....	July 1, 1871	New Orleans..	Contract in the northwestern district.
William D. Duke.....	Aug. 8, 1871	.....do .....	Survey in the southeastern district, west of river.

E. W. FOSTER,  
*Surveyor General, Louisiana.*

SURVEYOR GENERAL'S OFFICE,  
*New Orleans, Louisiana, September 25, 1871.*

II.—Certificates of relocation or scrips issued under act of June 2, 1858, by the surveyor general of Louisiana, for the fiscal year ending June 30, 1871, and former years.

Number.	By whom issued.	To whom issued.	Date.	Quantity in acres.	80-acre certificates.	Fractional certificates.	Mark of certificates.	Remarks.
1	W. J. McCulloh	Louis Boisdoré or his legal representatives	Jan. 21, 1859	677.00	Pieces.	1 of 677.00	.....	No further report.
2	do.	Widow Boisdoré or her legal representatives	Jan. 21, 1859	677.00	.....	1 of 677.00	.....	Do.
3	do.	Manette Boisdoré or her legal representatives	Jan. 21, 1859	640.00	.....	1 of 640.00	.....	Do.
4	do.	John Williams or his legal representatives	May 17, 1859	640.00	.....	1 of 640.00	.....	Exchanged for 8 pieces of scrip of 80 acres each. No further report.
5	do.	Ebenezer Cooley or his legal representatives	Sept. 11, 1860	2,000.00	25	.....	No. 5, from A. to Y.	Returned and delivered.
6	do.	Emanuel Prudhomme or his legal representatives	Oct. 10, 1860	325.38	3	1 of 85.38	No. 6, from A. to D.	No further report.
7	do.	do.	Oct. 10, 1860	637.30	6	1 of 137.30	No. 7, from A. to G.	Do.
8	do.	J. R. Temple or his legal representatives	Oct. 13, 1860	374.12	3	1 of 134.12	No. 8, from A. to D.	Do.
9	do.	H. Faulk and others or their legal representatives	Oct. 13, 1860	203.81	1	1 of 123.81	No. 9, from A. to E.	Sent to Hon. Frank Morey for delivery.
10	do.	John McDonogh or his legal representatives	Nov. 27, 1860	1,015.54	11	1 of 135.54	No. 10, from A. to L.	Returned and delivered.
11	do.	Root Ducros or his legal representatives	Dec. 16, 1860	1,864.26	22	1 of 104.26	No. 11, from A. to W.	No further report.
12	do.	Thomas powers or his legal representatives	Dec. 20, 1860	640.00	8	.....	No. 12, from A. to H.	Transmitted to Louis Janin by Commissioner.
13	do.	Rosannah Harris or his legal representatives	Jan. 21, 1861	640.00	8	.....	No. 13, from A. to H.	No further report.
14	do.	John Towles or his legal representatives	Jan. 21, 1861	507.76	5	1 of 107.76	No. 14, from A. to F.	Do.
15	do.	do.	Jan. 21, 1861	1,015.53	11	1 of 135.53	No. 15, from A. to L.	Do.
16	do.	do.	Jan. 21, 1861	338.51	3	1 of 98.51	No. 16, from A. to D.	Do.
17	do.	Patzey Bennett or her legal representatives	Mar. 4, 1861	640.00	.....	.....	.....	Null and void, being issued after February 6, 1861.
18	John Lynch	John McClenden or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 18, from A. to H.	Returned and delivered.
19	do.	Joseph L. Mulkey or his legal representatives	Dec. 13, 1870	640.00	8	.....	No. 19, from A. to H.	Do.
20	do.	James Simmons or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 20, from A. to H.	Do.
21	do.	John James Simmons or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 21, from A. to H.	Do.
22	do.	William Phares or his legal representatives	Dec. 7, 1870	640.00	8	.....	No. 22, from A. to H.	Do.
23	do.	Samuel Phares or his legal representatives	Dec. 7, 1870	640.00	.....	.....	.....	Canceled. (See Commissioner's letter of May 11, 1871.)
24	do.	Pierre Noland or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 24, from A. to H.	Returned for examination.
25	do.	George Keller or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 25, from A. to H.	Do.
26	do.	Thomas East or his legal representatives	Dec. 5, 1870	640.00	8	.....	No. 26, from A. to H.	Returned and delivered.
27	do.	do.	Dec. 5, 1870	640.00	8	.....	No. 27, from A. to H.	Do.
28	do.	E. Norwood or his legal representatives	Mar. 8, 1871	640.00	8	.....	No. 28, from A. to H.	Returned for examination.



II.—*Certificates of relocation or scrips issued under the act of June 2, 1858, by the surveyor general of Louisiana, &c.—Continued.*

Number.	By whom issued.	To whom issued.	Date.	Quantity in acres.	80-acre certificates.	Fractional certificates.	Mark of certificates.	Remarks.
29	John Lynch...	John Powers or his legal representatives.....	Mar. 8, 1871	640.00	<i>Pieces.</i>	.....	No. 29, from A. to H.	Returned and delivered.
30	do.....	James C. Black or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 30, from A. to H.	Do.
31	do.....	Peter Galloway or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 31, from A. to H.	Returned for examination.
32	do.....	Thomas Brown or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 32, from A. to H.	Returned and delivered.
33	do.....	Philemon Thomas or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 33, from A. to H.	Do.
34	do.....	Lewis Pyburnen, sr., or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 34, from A. to H.	Returned for corrections, &c.
35	do.....	Philemon Thomas or his legal representatives.....	Mar. 8, 1871	203.10	2	1 of 43.10	No. 35, from A. to C.	Returned for examination.
36	do.....	Patrick Strachan or his legal representatives.....	Mar. 8, 1871	316.66	3	1 of 76.66	No. 36, from A. to D.	Returned and delivered.
37	do.....	James Felps or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 37, from A. to H.	Returned for examination.
38	do.....	Nathaniel Fauver or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 38, from A. to H.	Do.
39	do.....	John C. Williams or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 39, from A. to H.	Returned and delivered.
40	do.....	William Brown or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 40, from A. to H.	Returned for examination.
41	do.....	do.....	Mar. 8, 1871	640.00	8	.....	No. 41, from A. to H.	Returned and delivered.
42	do.....	Robert Flucker or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 42, from A. to H.	Do.
43	do.....	John Powers or his legal representatives.....	Mar. 8, 1871	640.00	8	.....	No. 43, from A. to H.	Do.
44	do.....	Samuel Llewellyn or his legal representatives.....	Mar. 8, 1871	1,256.00	16	1	No. 44, from A. to F.	Do.
45	E. W. Foster	Baron de Bastrop or his legal representatives.....	Apr. 13, 1871	1,452.27	17	1 of 92.27	No. 45, from A. to R.	Do.
46	do.....	Charles McMicken or his legal representatives ..	July 8, 1871	1,683.13	8	1 of 43.13	No. 46, from A. to J.	No further report.

E. W. FOSTER, *Surveyor General, Louisiana.*SURVEYOR GENERAL'S OFFICE, *New Orleans, Louisiana, September 25, 1871.*

*C.—Report of the surveyor general of Minnesota.*

SURVEYOR GENERAL'S OFFICE,  
St. Paul, Minnesota, September 18, 1871.

SIR: In accordance with your instructions, I have the honor to submit the following report of the progress of the public surveys in this district, and a statement of the amount of office-work performed from the date of the last annual report from this office to September 1, 1871, together with the several tables usually accompanying such report.

All the field-work undertaken during the year 1870 has been completed, with the exception of a small contract with Charles Tengwall, and the notes of a large proportion of the same have been examined and approved; the original plats constructed and copied and, with transcripts of the field-notes, transmitted to the General Land Office. Most of the region of country surveyed the past year is of a character that has made the office-work, particularly in the draughting department, slow and tedious. This has been remarkably the case with the surveys within the limits of the Northern Pacific Railroad. Lakes almost without number are found, and the topography of the country generally is of a character that necessitates a great amount of labor in the construction of maps fully and accurately showing the same.

The established fact that the Northern Pacific Railroad and the St. Paul and Pacific Railroad will be completed to the Red River this season is causing a volume of emigration to the northwestern portion of the State, unprecedented in any previous year. In Otter Tail and Becker Counties, and in nearly the whole extent of the valley of the Red River, settlements are being made with astonishing rapidity. It is estimated that along the line of the Northern Pacific Railroad, and in the region above mentioned, not less than 30,000 inhabitants will be added to the permanent population of the State during the present season.

Other parts of the State have also received large accessions of settlers during the year.

This immense emigration, already greatly in advance of the surveys, is the principal reason for the large estimate for field and office work for the fiscal year ending June 30, 1873, which I had the honor to make and transmit on the 26th ultimo. It would seem to be of very great advantage to all concerned for the Government settlers and railroad companies to have the surveys, for a few years at least, rapidly extended.

As timber agent I have caused a thorough examination of the lumber regions, and shall endeavor to be equally thorough in making collections from trespassers on the public lands. The duties required of timber agent occupy much time for their faithful performance, and in many instances are vexatious and troublesome, and those services are required without any compensation whatever, which seems to be an unreasonable exaction.

For the better care and preservation of timber on the public lands I would recommend that an examiner be employed by the year, whose sole business should be to look after trespassers, and report from time to time to the timber agent.

In this connection I beg also to recommend that authority be given to the surveyor general to employ an examiner of the public surveys as they are prosecuted from year to year.

The deputies sent into the field this season, as far as heard from, are all making good progress, the season having been favorable, and it is believed that all the surveys will be completed within the time fixed in the contracts.

The following abstract of office-work performed since the last annual report is presented:

The original notes of 10,545 miles 4 chains and 16 links of subdivisional and meander lines have been examined, the contents of fractional lots calculated and placed on the plats, the original and commissioners' made and transmitted.

Of township lines 1,103 miles 31 chains and 73 links have been examined and diagrams and transcripts made and transmitted.

One hundred and sixty-four township plats have been constructed from the original field-notes, duplicates made and transmitted to the General Land Office, and 78 copies made and forwarded to the local land offices; making an aggregate of 406 plats sent out or filed in this office.

Nine thousand pages of transcripts for the Department and for record in this office have been made, compared, and indexed, with title-page to each township.

There have been made for the local land offices 179 townships of descriptive notes, and a like number for filing in this office, making a total of 358 sheets.

Considerable time has been occupied in examining the original plats, and selecting therefrom land inuring to the State as "swamp land," making lists of same and transmitting them to the local and general land offices.

The miscellaneous business of the office, such as preparing contracts and bonds, diagrams for deputy surveyors, the general correspondence of the office, &c., involves much time and labor, of which no itemized statement can well be given.

The tables accompanying this report are believed to be full and comprehensive, and, are as follows :

A.—Amount, character, locality, and present condition of the surveys in this State so far as completed or undertaken.

B.—Statement of original, commissioners', and register's plats, made and copied, date of transmission to the general and local land offices since the last annual report.

C.—Statement of townships surveyed from July 1, 1870, to September 1, 1871, showing area and number of miles surveyed in each, including meanders in each.

D.—Abstract statement of incidental expenses of the office for the year ending June 30, 1871.

A township and sectional map will also accompany this report, showing the amount and present condition of the surveys in this surveying district.

I am, very respectfully, your obedient servant,

C. T. BROWN,  
*Surveyor General.*

Hon. WILLIS DRUMMOND,  
*Commissioner of the General Land Office.*



A.—Statement showing the amount, character, locality, and present condition of the surveys in Minnesota uncompleted at and undertaken since the date of the last annual report.

Names of deputies.	Date of contract.	Character of work.	Amount and locality.	Present condition.
T. B. Walker.....	June 23, 1869	Subdivisions.....	<i>Uncompleted contracts under appropriation for year ending June 30, 1870.</i> Subdivision lines of townships 55 and 56 north, range 24 west, township 56 north, range 26 west, 4th principal meridian; and township 135 north, range 30 west; townships 134 and 138 north, range 31 west, 5th principal meridian.	Surveys completed and approved, and notes and plats transmitted.
B. T. Jenness .....	June 25, 1869	Township lines and subdivisions.	Township lines between townships 44 and 45 north, ranges 22 and 23 west, between townships 43 and 46, 46 and 47 north, ranges 20, 21, 22, and 23 west; range lines between ranges 22 and 23 west, of township 44 north; between ranges 20 and 21, 21 and 22, 22 and 23 west, of townships 45, 46, and 47 north; between ranges 23 and 24 west, of townships 46 and 47 north. Subdivision lines of township 47 north, ranges 22 and 23 west, 4th meridian; also township 45 north, ranges 17 and 18 west.	Surveys completed, and with exception of township 47 north, of ranges 22 and 23 west, have been approved, and notes and plats transmitted.
Wright & Beardsley...	July 13, 1869	Subdivisions.....	Subdivision lines of township 131 north, ranges 44, 45, and 46 west; townships 129, 130, and 131 north, range 47 west; townships 134, 135, and 136 north, ranges 43, 44, and 45 west, 5th meridian.	Surveys completed, approved, and notes and plats transmitted.
George G. Beardsley... (Instructions) Nathan Butler.....	Jan. 7, 1870 Feb. 14, 1870	Survey of island..... Township lines and subdivisions.	Survey of island in section 14, township 129 north, range 35 west, 5th meridian. Township lines between fractional townships 46 and 47 north, range 30 west, 4th meridian. Subdivision lines of township 46 north, range 30 west, 4th meridian.	Survey completed, approved, and notes and plats transmitted. Surveys completed, approved, and notes and plats transmitted.
Nathan Butler.....	Aug. 4, 1870	Township lines and subdivisions.	<i>Contracts for year ending June 30, 1871, under general appropriation of \$40,000, per act of July 15, 1870.</i> Township lines between townships 122 and 123 north, ranges 46, 47, and 48 west, 5th meridian; between townships 123 and 124 north, ranges 46, 47, 48, and 49 west; between townships 125 and 126 north, ranges 46, 47, 48, and 49 west; between townships 127 and 128 north, ranges 46 and 47 west, 5th meridian; range lines between ranges 46 and 47 west, townships 122, 123, 124, 125, 126, 127, and 128 north; between ranges 47 and 48 west, townships 122, 123, 124, 125, and 126 north; between ranges 48 and 49 west, townships 123, 124, 125, and 126 north. Subdivision lines of township 125 and fractional township 126 north, range 48 west; also fractional township lines 125 and 126 north, range 49 west, 5th meridian.	Surveys completed, approved, and notes and plats transmitted.
Wright, Beardsley & Miles.	Aug. 4, 1870	Subdivisions.....	Subdivision lines of township 121 north, ranges 41, 42, 43, and 44 west, 5th principal meridian; also townships 122 and 123 north, range 45, and fractional township 122 north, range 46 west; town-	Surveys completed, approved, and notes and plats transmitted.

A.—Statement showing the amount, character, locality, and present condition of the surveys in Minnesota, &amp;c.—Continued.

Names of deputies.	Date of contract.	Character of work.	Amount and locality.	Present condition.
Walker, Allen, & Putnam.	Aug. 4, 1870	Subdivisions.....	ships 123, 124, 125, and 126 north, range 46 west, and fractional townships 122 and 123 north, range 47 west; fractional townships 122, 123, and 124 north, range 48 west, and fractional townships 123 and 124 north, range 49 west, 5th meridian. Subdivision lines of township 122 north, ranges 41, 42, and 43 west; townships 122, 123, 124, 125, and 126 north, range 44 west; townships 124, 125, and 126 north, range 45 west; townships 127 and 128 north, range 46 west; also townships 127 and 128, range 47 west, 5th principal meridian.	Field-work completed. Notes of townships 127 and 128 north, ranges 46 and 47 west, on file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and notes transmitted.
Charles E. Davis..... Stuntz & Shaw.....	Aug. 10, 1870 Aug. 8, 1870	Subdivisions..... Subdivisions.....	Subdivision lines of townships 45, 46, and 47 north, ranges 20 and 21 west, 4th principal meridian. Subdivision lines of townships 50, 51, 52, and 53 north, ranges 16 and 17 west, and townships 49, 50, 51, 52, and 53 north, range 18 west, 4th principal meridian.	Surveys completed, approved, and plats and notes transmitted. Field-work completed. Notes of townships 49, 50, 51, 52, and 53 north, range 18 west, or file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and field-notes transmitted.
Samuel E. Stebbens..... B. & H. Comstock..... Lewis Harrington.....	Aug. 15, 1870 Aug. 18, 1870 Aug. 24, 1870	Subdivisions..... Subdivisions..... Township lines and subdivisions.	Subdivision lines of townships 103 and 104 north, range 45 west; also townships 101, 102, and 103 north, ranges 46 and 47 west, 5th principal meridian. Subdivision lines of townships 54, 55, and 56 north, ranges 12, 13, 14, and 15 west, 4th principal meridian. Township lines between townships 105 and 106, 106 and 107, 107 and 108, ranges 46 and 47 west; range lines between ranges 46 and 47 west, townships 106 and 107 north; also subdivision lines of townships 106 and 107 north, ranges 45, 46, and 47 west, 5th meridian.	Surveys completed, approved, and plats and notes transmitted. Surveys completed, approved, and plats and notes transmitted.
Walker, Allen, & Putnam.	Aug. 4, 1870	Subdivisions.....	<i>Contracts for year ending June 30, 1871, under appropriation per act of July 15, 1870, for surveys within limit of land grant to Northern Pacific Railroad.</i> Subdivision lines of township 134 north, range 27 west; townships 133, 135, and 136 north, range 28 west; townships 133 and 136 north, range 29 west; township 133 north, range 30 west; township 134 north, range 32 west; township 136 north, range 34 west; townships 134, 135, and 136 north, range 35 west; townships 133, 134, 135, 136 north, range 36 west, 5th meridian.	Surveys completed, approved, and plats and notes transmitted.
Nathan Butler.....	Aug. 4, 1870	Subdivisions.....	Subdivision lines of townships 133, 134, and 135 north, range 41 west; also township 134 north, range 42 west, 5th principal meridian.	Field-work completed. Notes on file in office awaiting order of examination.

George B. Wright.....	Aug. 4, 1870	Township lines.....	Township lines between townships 137 and 138, 138 and 139, 139 and 140 north, ranges 39, 40, 41, 42, 43, 44, and 45 west, fifth principal meridian; range lines between ranges 39, and 40, 40 and 41, 41 and 42, 42 and 43, 43 and 44, 44 and 45 west, townships 137, 138, 139, and 140 north.	Surveys completed, approved, and plats and notes transmitted.
Merrill, Wilcox, & Walker.	Aug. 8, 1870	Subdivisions.....	Subdivision lines of townships 135, 136, and 47 west, fifth principal meridian.	Surveys completed, approved, and plats and notes transmitted.
David Watson.....	Aug. 9, 1870	Township lines.....	Township lines between townships 48 and 49 north, ranges 22, 23, and 24 west, 4th meridian; between townships 49 and 50, 50 and 51, 51 and 52, 52 and 53 north, ranges 22, 23, 24, and 25 west, 4th meridian; range lines between ranges 22 and 23, 23 and 24 west, townships 48, 49, 51, 52, and 53 north; and between ranges 24 and 25 west, townships 49, 50, 51, 52, and 53 north.	Surveys completed, approved, and plats and notes transmitted.
A. & William F. Ingerson.	Aug. 10, 1870	Township lines and subdivisions.	Township lines between townships 46 and 47 north, ranges 25, 26, 27, and 28 west; range lines between ranges 24 and 25, 25 and 26, 26 and 27, 27 and 28 west, townships 46 and 47 north; also between ranges 28 and 29, 29 and 30 west, townships 47 and 48 north. Subdivision lines of township 46 north, ranges 27 and 28 west, and fractional township 47 north, ranges 27 and 29, and 30 west, 4th meridian.	Field-work completed. Notes of range line between ranges 29 and 30 west, township 47 north, and subdivision lines of township 46 north, of range 28 west, and fractional township 47 north, ranges 29 and 30 west, on file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and notes transmitted.
Jewett C. Howe.....	Aug. 11, 1870	Township lines and subdivisions.	Township lines between townships 48 and 49 north, ranges 19, 20, and 21 west; between townships 49 and 50 north, ranges 18, 19, 20, and 21 west; between townships 50 and 51 north, ranges 16, 17, 18, 19, 20, and 21 west; between townships 51 and 52 north, 52 and 53 north, ranges 16, 17, 18, 19, 20, and 21 west, 4th principal meridian; range lines between ranges 16 and 17, 17 and 18 west, townships 50, 51, 52, and 53 north; between ranges 18 and 19 west, townships 49, 50, 51, 52, and 53 north; between ranges 19 and 20, 20 and 21, 21 and 22 west, townships 48, 49, 50, 51, 52, and 53 north. Subdivision lines of townships 48 and 49 north, ranges 19 and 20 west, 4th meridian.	Field-work completed. Notes of subdivisions of township 49 north, range 19 west, and townships 48 and 49 north, range 20 west; also of township lines between townships 52 and 53 north, range 19 west; between townships 48 and 49, 49 and 50, 50 and 51, 51 and 52, 52 and 53 north, ranges 20 and 21 west; and of range lines between ranges 19 and 20 west, townships 52 and 53 north; and between ranges 20 and 21, townships 48, 49, 50, 51, 52, and 53 north, on file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and notes transmitted.
Milton C. Noel.....	Aug. 11, 1870	Subdivisions.....	Subdivision lines of township 137 north, ranges 35, 36, and 37 west, and township 138 north, ranges 36, 37, and 38 west, 5th principal meridian.	Surveys completed, approved, and plats and notes transmitted.
Richard Cronk.....	Aug. 11, 1870	Subdivisions.....	Subdivision lines of townships 136 and 137 north, range 30 west, and townships 135, 136, and 137 north, range 31 west, and township 137 north, range 32 west, 5th meridian.	Surveys completed, approved, and plats and notes transmitted.
Mahlon Black.....	Aug. 11, 1870	Subdivisions.....	Subdivision lines of township 138 north, ranges 32 and 33 west, and township 139 north, ranges 31, 32, and 33 west, and township 140 north, range 33 west, 5th meridian.	Field-work completed. Notes of subdivision of townships 139 and 140 north, range 33, on file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and notes transmitted.



A.—Statement showing the amount, character, locality, and present condition of the surveys in Minnesota, &amp;c.—Continued.

Names of deputies.	Date of contract.	Character of work.	Amount and locality.	Present condition.
Cooley & McDougall....	Aug. 16, 1870	Subdivisions.....	Subdivision lines of township 136 north, range 44 west; townships 135, 136, 137, and 138 north, range 42 west; townships 137 and 138 north, range 43 west; townships 137, 138, 139, and 140 north, range 45 west; townships 138, 139, 140, 141, and 142 north, range 46 west; townships 138, 140, 141, and 142 north, range 47 west, 5th meridian.	Field-work completed. Notes of township 136 north, range 41 west, and townships 135, 137, and 138 north, range 42 west, on file in office awaiting order of examination. Remainder of surveys completed, approved, and plats and notes transmitted.
William W. Howard....	Aug. 26, 1870	Subdivisions.....	Subdivision lines of township 137 north, range 39 west; townships 137 and 138 north, range 40 west; townships 137 and 138 north, range 41 west; township 139 north, range 42 west; township 139 north, range 43 west; townships 139 and 140 north, range 44 west, 5th meridian.	Field-work completed. Surveys of township 138 north, range 40, and township 137, range 41 west, completed, approved, and plats and notes transmitted. Remainder of surveys on file in office awaiting order of examination.
Warren M. Adley.....	Sept. 2, 1870	Subdivisions.....	Subdivision lines of townships 46 and 47 north, ranges 25 and 26 west, and township 47 north, range 27 west, 4th principal meridian.	Surveys completed, approved, and plats and notes transmitted.
O. E. Garrison.....	Sept. 5, 1870	Subdivisions.....	Subdivision lines of townships 42 north, ranges 25, 26, and 27 west, 4th principal meridian.	Surveys completed, approved, and plats and notes transmitted.
R. O. Chaney.....	Sept. 14, 1870	Subdivisions.....	Subdivision lines of townships 43, 49, and 50 north, range 24 west, and townships 49 and 50 north, range 25 west, 4th principal meridian.	Surveys completed, approved, and plats and notes transmitted.
Charles Tengwall.....	Oct. 4, 1870	Subdivisions.....	Subdivision lines of townships 51 and 52 north, and townships 51, 52, and 53 north, range 25 west, 4th principal meridian.	Contract abandoned by deputy.
T. B. Walker.....	Oct. 18, 1870	Subdivisions.....	Subdivision lines of township 140 north, ranges 31 and 32 west, 5th meridian.	Surveys completed, approved, and plats and notes transmitted.
Merrill, Wilcox & Daniels.	Oct. 21, 1870	Subdivisions.....	Subdivision lines of township 140 north, ranges 39, 40, 41, 42, and 43 west, and township 139 of ranges 39 and 40 west, 5th meridian.	Field-work completed. Notes on file in office, awaiting order of examination.
Walker, Allen & Putnam.	Mar. 11, 1871	Township lines and subdivisions.	Township lines between townships 141 and 142 north, ranges 25 and 26 west; principal meridian; range lines between ranges 25 and 26 west, townships 141 and 142 north, and between ranges 26 and 27 west, township 141 north. Subdivision lines of townships 141 and 142 north, range 25 west; townships 140 and 141 north, range 26 west; township 140 north, range 35 west; townships 139 and 140 north, range 36 west; townships 139 and 140 north, range 37 west; townships 139 and 140 north, range 38 west, 5th meridian.	Notes of township lines and the subdivisions of townships 141 and 142 north, range 25 west, and townships 140 and 141 north, of range 26 west, filed in this office for examination. Deputies in the field completing remainder of surveys.
R. K. Whiteley.....	Mar. 14, 1871	Township lines and subdivisions.	Township line between townships 46 and 47 north, range 24 west, 4th meridian. Subdivision lines of townships 46 and 47 north, range 24 west, 4th meridian.	Surveys completed, approved, and plats and notes transmitted.
R. O. Chaney.....	Mar. 15, 1871	Subdivisions.....	Subdivision lines of township 48 north, range 23 west, 4th meridian.	Surveys completed, approved, and plats and notes transmitted.

Contract out of appropriation "for surveys of exterior boundaries of Indian reservations, &c., approved July 15, 1870," United States laws, 1869 and 1870, page 358.

William R. Marshall and associates.	Apr. 14, 1871	Exterior township lines and sub- divisions.	Out-boundaries of the White Earth Indian Reservation, being co- extensive with and including townships 141 to 146 north, both in- clusive, and ranges 37 to 42 west, 5th meridian, both inclusive. Township and range lines of townships 141, 142, 143, 144, 145, and 146 north, ranges 41 and 42 west, and townships 141, 142, and 143 north, range 40 west, 5th meridian. Subdivisions into 40-acre tracts of townships 141, 142, 143, 144, 145, and 146 north, ranges 41 and 42 west, and townships 141, 142, and 143 north, range 40 west, 5th principal meridian.	Deputies in the field.
Walker, Allen & Put- nam.	May 11, 1871	Subdivisions .....	<i>Contracts for year ending June 30, 1872, out of appropriation as per act of March 3, 1871.</i> Subdivision lines of township 130 north, ranges 36 and 37 west, and townships 131 and 132 north, ranges 36, 37, 38, and 39 west, 5th meridian.	Deputies in the field.
George R. Stuntz .....	May 12, 1871	Standard parallels and guide meridians.	The 11th standard parallel from the 3d guide meridian to the east- ern boundary of the White Earth Indian Reservation, and from the western boundary of the reservation to the 6th guide merid- ian; also the 12th standard parallel from the 3d guide meridian to the Red River. The 4th guide meridian between the 10th and 12th standard parallels, the 5th guide meridian from the northern boundary of the White Earth Indian Reservation to the 12th standard parallel, and the 6th guide meridian between the 11th and 12th standard parallels.	Deputy in the field.
Merrill, Austin & Van Solen.	May 17, 1871	Township lines and sub- divisions.	Range lines between ranges 46 and 47 west of townships 105 and 108 north. Subdivision lines of townships 109, 110, 111, and 112 north of range 44 west; townships 108, 109, 110, 111, and 112 north, range 45 west; townships 104, 105, 108, 109, 110, 111, and 112 north of range 46 west, and fractional townships 104, 105, 108, 109, 110, 111, and 112 north of range 47 west, 5th meridian.	Deputies in the field.
Lewis Harrington .....	June 2, 1871	Township lines and sub- divisions.	Township lines between townships 113 and 114, 114 and 115, 115 and 116 north of range 46 west, 5th meridian. Subdivision lines of town- ships 113, 114, and 115 north, ranges 41, 45, and 46 west, 5th meridian.	Deputy in the field.
Beardsley & Miles .....	June 17, 1871	Township lines and sub- divisions.	Township lines between townships 141 and 142, 142 and 143, 143 and 144 north of ranges 43, 44, and 45 west, 5th meridian; range lines between ranges 43 and 44, 44 and 45 west of townships 141, 142, 143, and 144 north. Subdivision lines of townships 141, 142, 143, and 144 north of ranges 43, 44, and 45 west; townships 143 and 144 north of ranges 46 and 47 west, and township 144 north of range 48 west, 5th meridian.	Deputies in the field.
R. K. Whiteley .....	June 26, 1871	Township lines and sub- divisions.	Township lines between townships 145 and 146 north of ranges 46, 47, 48, and 49 west, 5th meridian; range lines between ranges 46 and 47, 47 and 48, 48 and 49 west of township 145 north. Subdi- vision lines of township 139 north of range 41 west, and township 145 north of ranges 46, 47, 48, and 49 west, 5th meridian.	Deputy in the field.
Utter & Alley .....	Aug. 3, 1870	Township lines and sub- divisions.	Township line between townships 117 and 118 north of range 46 west. Subdivision lines of township 116 north of ranges 43, 44, 45, and 46 west; township 117 north of ranges 44, 45, and 46 west, and township 118 north of range 46 west, 5th meridian.	Deputies in the field.

C. T. BROWN, *Surveyor General.*

SURVEYOR GENERAL'S OFFICE, St. Paul, September 1, 1871.

B.—Statement of original, Commissioner's, and register's plats made and copied, date of transmission to General Land Office and local land offices, from date of last annual report.

Township.	Range.	Land office.	Original.	Commissioner's.	When trans- mitted.	Register's.	When trans- mitted.	Total.
45	17	Taylor's Falls.....				1	Sept. 9, 1870	1
45	18	do.....				1	do.....	1
55	24	St. Cloud.....				1	Dec. 31, 1870	1
56	24	do.....				1	do.....	1
56	26	do.....				1	do.....	1
52	27	do.....				1	do.....	1
53	27	do.....				1	do.....	1
54	27	do.....				1	do.....	1
55	27	do.....				1	do.....	1
121	45	do.....				1	do.....	1
131	41	Alexandria.....				1	Nov. 19, 1870	1
132	41	do.....				1	do.....	1
134	43	do.....				1	do.....	1
134	45	do.....				1	do.....	1
135	45	do.....				1	do.....	1
136	45	do.....				1	do.....	1
131	44	do.....				1	Dec. 1, 1870	1
131	45	do.....				1	do.....	1
131	46	do.....				1	do.....	1
129	47	do.....				1	do.....	1
130	47	do.....				1	do.....	1
131	47	do.....				1	do.....	1
121	46	do.....				1	Dec. 31, 1870	1
54	14	Du Luth.....	1	1	Jan. 7, 1871	1	April 17, 1871	3
55	14	do.....	1	1	do.....	1	do.....	3
56	14	do.....	1	1	do.....	1	do.....	3
50	16	do.....	1	1	Feb. 24, 1871	1	do.....	3
56	12	do.....	1	1	April 26, 1871	1	June 14, 1871	3
56	13	do.....	1	1	do.....	1	do.....	3
54	15	do.....	1	1	do.....	1	do.....	3
55	15	do.....	1	1	do.....	1	do.....	3
56	15	do.....	1	1	do.....			2
46	20	do.....	1	1	May 6, 1871	1	June 14, 1871	3
51	16	do.....	1	1	May 29, 1871	1	July 11, 1871	3
53	16	do.....	1	1	do.....	1	do.....	3
50	17	do.....	1	1	do.....	1	do.....	3
51	17	do.....	1	1	do.....	1	do.....	3
52	17	do.....	1	1	do.....	1	do.....	3
53	17	do.....	1	1	do.....	1	do.....	3
54	12	do.....	1	1	July 25, 1871			2
55	12	do.....	1	1	do.....			2
54	13	do.....	1	1	do.....			2
55	13	do.....	1	1	do.....			2
47	20	do.....	1	1	Aug. 15, 1871			2
46	21	do.....	1	1	do.....			2
47	21	do.....	1	1	do.....			2
48	19	do.....	1	1	May 19, 1871	1	June 14, 1871	3
48	23	do.....	1	1	June 30, 1871			2
45	20	Taylor's Falls.....	1	1	March 14, 1871	1	April 5, 1871	3
45	21	do.....	1	1	do.....	1	do.....	3
42	25	do.....	1	1	Jan. 26, 1871	1	do.....	3
42	26	do.....	1	1	do.....	1	do.....	3
42	27	do.....	1	1	do.....	1	do.....	3
103	45	Jackson.....	1	1	March 18, 1871	1	May 16, 1871	3
104	45	do.....	1	1	do.....	1	do.....	3
101	46	do.....	1	1	do.....	1	do.....	3
102	46	do.....	1	1	do.....	1	do.....	3
103	46	do.....	1	1	do.....	1	do.....	3
101	47	do.....	1	1	do.....	1	do.....	3
102	47	do.....	1	1	do.....	1	do.....	3
103	47	do.....	1	1	do.....	1	do.....	3
106	45	New Ulm.....	1	1	Dec. 2, 1870	1	Feb. 8, 1871	3
107	45	do.....	1	1	do.....	1	do.....	3
106	46	do.....	1	1	do.....	1	do.....	3
107	46	do.....	1	1	do.....	1	do.....	3
106	47	do.....	1	1	do.....	1	do.....	3
107	47	do.....	1	1	do.....	1	do.....	3
46	30	St. Cloud.....	1	1	Sept. 19, 1870	1	Dec. 31, 1870	3
140	28	do.....	1	1	Nov. 22, 1870	1	April 29, 1871	3
140	29	do.....	1	1	do.....	1		3
122	41	do.....	1	1	Nov. 28, 1870			2
122	42	do.....	1	1	do.....			2
122	43	do.....	1	1	do.....			2



B.—Statement of original, Commissioner's, and register's plats made, &amp;c.—Continued.

Township.	Range.	Land office.	Original.	Commissioner's.	When trans- mitted.	Register's.	When trans- mitted.	Total.
122	44	St. Cloud.....	1	1	Nov. 28, 1870			2
123	44	do.....	1	1	do.....			2
124	45	do.....	1	1	do.....			2
124	44	do.....	1	1	Jan. 7, 1871			2
121	41	do.....	1	1	Jan. 9, 1871			2
121	42	do.....	1	1	do.....			2
122	48	do.....	1	1	do.....			2
123	48	do.....	1	1	do.....			2
124	48	do.....	1	1	do.....			2
123	49	do.....	1	1	do.....			2
136	34	do.....	1	1	Jan. 7, 1871			2
134	35	do.....	1	1	do.....			2
136	35	do.....	1	1	do.....			2
133	28	do.....	1	1	Feb. 8, 1871			2
133	29	do.....	1	1	do.....	1	June 10, 1871	3
137	35	do.....	1	1	do.....	1	June 16, 1871	3
122	46	do.....	1	1	April 5, 1871			2
123	46	do.....	1	1	do.....			2
122	47	do.....	1	1	do.....			2
123	47	do.....	1	1	do.....			2
136	29	do.....	1	1	April 8, 1871			2
134	32	do.....	1	1	do.....			2
135	35	do.....	1	1	do.....			2
138	31	do.....	1	1	April 11, 1871			2
140	31	do.....	1	1	April 27, 1871			2
140	32	do.....	1	1	do.....			2
134	27	do.....	1	1	May 9, 1871			2
135	28	do.....	1	1	do.....			2
136	28	do.....	1	1	do.....			2
133	30	do.....	1	1	do.....			2
121	43	do.....	1	1	May 16, 1871			2
121	44	do.....	1	1	do.....			2
123	45	do.....	1	1	do.....			2
136	30	do.....	1	1	June 14, 1871			2
135	31	do.....	1	1	do.....			2
136	31	do.....	1	1	do.....			2
49	25	do.....	1	1	June 30, 1871			2
50	25	do.....	1	1	do.....			2
122	45	do.....	1	1	July 6, 1871			2
124	46	do.....	1	1	do.....			2
124	47	do.....	1	1	do.....			2
124	49	do.....	1	1	do.....			2
46	27	do.....	1	1	July 14, 1871			2
47	28	do.....	1	1	do.....			2
46	25	do.....	1	1	Aug. 12, 1871			2
47	25	do.....	1	1	do.....			2
46	26	do.....	1	1	do.....			2
47	26	do.....	1	1	do.....			2
47	27	do.....	1	1	do.....			2
46	24	do.....	1	1	Aug. 15, 1871			2
47	24	do.....	1	1	do.....			2
139	31	do.....	1	1	Aug. 19, 1871			2
138	32	do.....	1	1	do.....			2
139	32	do.....	1	1	do.....			2
138	33	do.....	1	1	do.....			2
48	24	do.....	1	1	Aug. 23, 1871			2
49	24	do.....	1	1	do.....			2
50	24	do.....	1	1	do.....			2
137	30	do.....	1	1	Aug. 26, 1871			2
137	31	do.....	1	1	do.....			2
137	32	do.....	1	1	do.....			2
135	43	Alexandria.....	1	1	Sept. 21, 1870	1	Nov. 19, 1870	3
134	44	do.....	1	1	do.....	1	do.....	3
136	43	do.....	1	1	Oct. 11, 1870	1	Dec. 1, 1870	3
135	44	do.....	1	1	do.....	1	do.....	3
136	44	do.....	1	1	do.....	1	do.....	3
125	45	do.....	1	1	Nov. 28, 1870			2
135	46	do.....	1	1	Nov. 30, 1870	1	July 13, 1871	3
136	46	do.....	1	1	do.....	1	do.....	3
137	46	do.....	1	1	do.....	1	do.....	3
135	47	do.....	1	1	Nov. 30, 1870	1	do.....	3
136	47	do.....	1	1	do.....	1	do.....	3
137	47	do.....	1	1	do.....	1	do.....	3
125	44	do.....	1	1	Jan. 7, 1871			2
126	44	do.....	1	1	do.....			2

## B.—Statement of original, Commissioner's, and register's plats made, &amp;c.—Continued.

Township.	Range.	Land office.	Original.	Commissioner's.	When trans- mitted.	Register's.	When trans- mitted.	Total.
126	45	Alexandria.....	1	1	Jan. 7, 1871			2
133	36	do.....	1	1	do			2
137	36	do.....	1	1	March 23, 1871	1	June 20, 1871	3
137	37	do.....	1	1	do	1	do	3
138	36	do.....	1	1	do			2
138	37	do.....	1	1	do			2
138	38	do.....	1	1	do			2
134	36	do.....	1	1	April 8, 1871			2
135	36	do.....	1	1	do			2
186	36	do.....	1	1	do			2
125	46	do.....	1	1	April 20, 1871			2
126	46	do.....	1	1	do			2
125	47	do.....	1	1	do			2
126	47	do.....	1	1	do			2
140	45	do.....	1	1	April 22, 1871			2
138	46	do.....	1	1	do			2
139	46	do.....	1	1	do			2
140	46	do.....	1	1	do			2
141	46	do.....	1	1	do			2
142	46	do.....	1	1	do			2
138	47	do.....	1	1	do			2
140	47	do.....	1	1	do	1	July 13, 1871	3
141	47	do.....	1	1	do			2
142	47	do.....	1	1	do			2
137	45	do.....	1	1	June 7, 1871			2
138	45	do.....	1	1	do			2
139	45	do.....	1	1	do			2
125	48	do.....	1	1	June 23, 1871			2
126	48	do.....	1	1	do			2
125	49	do.....	1	1	do			2
126	49	do.....	1	1	do			2
138	40	do.....	1	1	July 10, 1871			2
137	41	do.....	1	1	do			2
136	42	do.....	1	1	Aug. 14, 1871			2
137	43	do.....	1	1	do			2
138	43	do.....	1	1	do			2
137	44	do.....	1	1	do			2
138	44	do.....	1	1	do			2
Total.....			164	164		78		406
Fr'l 125 *	49	Alexandria .....				1	Aug. 21, 1871	1

\* Survey and plat made under direction of the surveyor general of Dakota.

C. T. BROWN, *Surveyor General*.SURVEYOR GENERAL'S OFFICE, *St. Paul*, September 1, 1871.

## C.—Statement of townships surveyed from the 1st day of July, 1870, to date, showing area and number of miles surveyed (including meanders) in each.

Number.	Town- ship.	Range.	Area.	No. of miles surveyed.
1.....	54	12	21,821.26	<i>M. ch. lk.</i> 78 69 95
2.....	55	12	22,338.57	86 20 18
3.....	56	12	22,930.87	68 58 67
4.....	54	13	22,858.56	75 63 29
5.....	55	13	22,963.13	65 40 14
6.....	56	13	22,854.22	67 66 38
7.....	54	14	23,043.11	61 19 59
8.....	55	14	23,018.39	60 71 30
9.....	56	14	22,772.87	65 30 91
10.....	54	15	23,060.43	68 25 90
11.....	55	15	22,241.65	80 23 74
12.....	56	15	22,504.13	63 49 49

## C.—Statement of townships surveyed, &amp;c.—Continued.

Number.	Town- ship.	Range.	Area.	No. of miles surveyed.
				<i>M. ch. lk.</i>
13.....	50	16	23,043.72	60 62 81
14.....	51	16	20,674.34	72 19 67
15.....	52	16	22,387.15	84 64 51
16.....	53	16	22,559.21	66 23 39
17.....	50	17	22,378.27	78 45 73
18.....	51	17	22,911.12	76 51 00
19.....	52	17	22,483.24	73 05 20
20.....	53	17	22,278.47	65 29 24
21.....	48	19	22,526.21	68 06 65
22.....	45	20	22,470.68	75 55 27
23.....	46	20	22,406.71	68 49 46
24.....	47	20	22,703.92	73 48 77
25.....	45	21	23,169.22	60 14 57
26.....	46	21	23,312.43	60 33 30
27.....	47	21	23,163.83	61 79 15
28.....	48	23	22,487.69	64 51 43
29.....	46	24	22,302.02	62 25 03
30.....	47	24	20,581.35	64 39 67
31.....	48	24	21,970.87	81 55 54
32.....	49	24	21,740.58	91 37 41
33.....	50	24	22,071.04	109 58 31
34.....	42	25	19,673.73	65 34 37
35.....	46	25	21,304.41	75 67 60
36.....	47	25	23,132.40	65 24 99
37.....	49	25	22,393.13	100 25 95
38.....	50	25	23,166.13	70 29 70
39.....	42	26	13,780.81	54 14 96
40.....	46	26	19,423.96	89 19 17
41.....	47	26	23,384.23	81 64 23
42.....	42	27	20,000.69	71 59 95
43.....	46	27	17,977.89	101 50 31
44.....	47	27	20,607.38	100 64 42
45.....	47	28	15,706.02	56 46 78
46.....	46	30	6,648.90	27 38 16
47.....	134	27	1,679.75	7 32 28
48.....	133	28	4,545.47	18 29 79
49.....	135	28	15,342.44	89 02 07
50.....	136	28	12,963.06	72 50 85
51.....	140	28	16,502.59	92 40 63
52.....	133	29	18,220.74	79 48 26
53.....	136	29	21,490.86	81 09 37
54.....	140	29	16,875.96	108 56 42
55.....	133	30	21,844.24	85 12 32
56.....	136	30	23,413.80	61 77 15
57.....	137	30	22,794.20	61 79 72
58.....	135	31	24,596.46	63 45 07
59.....	136	31	24,659.65	66 07 37
60.....	137	31	22,761.15	63 47 53
61.....	138	31	22,629.97	62 63 45
62.....	139	31	21,521.45	70 19 63
63.....	140	31	17,367.34	70 57 00
64.....	134	32	22,149.67	75 62 27
65.....	137	32	22,890.28	62 73 38
66.....	138	32	22,817.93	63 39 53
67.....	139	32	22,818.80	61 08 13
68.....	140	32	22,011.36	73 13 91
69.....	138	33	22,499.85	61 41 17
70.....	136	34	22,839.55	60 37 88
71.....	134	35	22,938.76	59 75 28
72.....	135	35	22,782.30	69 33 80
73.....	136	35	22,786.82	60 41 04
74.....	137	35	23,043.73	60 01 39
75.....	133	36	23,024.95	59 78 85
76.....	134	36	22,952.09	59 69 79
77.....	135	36	22,981.67	59 77 46
78.....	136	36	22,852.44	60 20 39
79.....	137	36	22,821.72	63 42 02
80.....	138	36	23,057.76	60 04 55
81.....	137	37	22,583.59	68 19 60
82.....	138	37	23,034.39	62 63 65
83.....	138	38	22,848.96	61 61 15
84.....	138	40	21,658.23	82 23 66
85.....	121	41	22,993.60	59 76 01
86.....	122	41	23,079.53	60 02 81
87.....	117	41	20,597.57	98 66 49
88.....	121	42	22,960.42	59 72 27
89.....	122	42	22,889.25	59 61 26
90.....	116	42	23,425.83	77 04 34
91.....	121	43	21,618.85	69 59 42



## C.—Statement of townships surveyed, &amp;c.—Continued.

Number.	Town- ship.	Range.	Area.	No. of miles surveyed.
92.....	122	43	21,190.45	<i>M. ch. lk.</i> 77 56 19
93.....	135	43	21,588.11	77 30 33
94.....	136	43	21,409.63	69 16 72
95.....	137	43	20,554.22	79 74 74
96.....	138	43	16,576.09	99 29 48
97.....	121	44	22,955.75	61 47 89
98.....	122	44	20,419.59	76 71 22
99.....	123	44	22,743.98	61 05 28
100.....	124	44	22,265.52	67 62 58
101.....	125	44	22,747.32	61 25 84
102.....	126	44	22,735.46	61 39 07
103.....	134	44	21,707.69	85 50 98
104.....	135	44	21,871.74	81 22 39
105.....	136	44	21,219.63	86 74 98
106.....	137	44	22,058.75	63 42 26
107.....	138	44	21,947.49	80 09 87
108.....	103	45	22,997.45	59 70 92
109.....	104	45	22,974.94	59 72 24
110.....	106	45	23,451.93	60 40 29
111.....	107	45	23,527.78	60 44 05
112.....	122	45	22,077.42	83 18 80
113.....	123	45	23,183.56	65 72 36
114.....	124	45	23,635.95	64 28 58
115.....	125	45	24,571.90	61 74 08
116.....	126	45	24,312.77	61 48 99
117.....	137	45	21,918.21	58 40 43
118.....	138	45	21,546.86	58 05 80
119.....	139	45	21,164.14	63 03 49
120.....	140	45	21,355.29	59 01 39
121.....	101	46	23,048.40	60 03 98
122.....	102	46	23,072.24	60 05 61
123.....	103	46	23,038.05	59 78 39
124.....	106	46	23,001.83	59 74 64
125.....	107	46	23,044.78	59 78 41
126.....	122	46	19,505.32	80 24 31
127.....	123	46	21,922.99	75 14 60
128.....	124	46	20,992.38	78 78 22
129.....	125	46	22,590.37	67 22 28
130.....	126	46	23,167.47	60 17 09
131.....	135	46	22,945.32	59 70 36
132.....	136	46	22,981.24	61 17 87
133.....	137	46	23,050.82	59 47 27
134.....	138	46	22,934.09	59 64 40
135.....	139	46	22,881.32	59 57 57
136.....	140	46	22,827.47	60 77 53
137.....	141	46	22,985.80	59 71 00
138.....	142	46	22,939.24	59 34 75
139.....	101	47	7,928.52	22 25 62
140.....	102	47	7,859.56	22 23 93
141.....	103	47	7,862.81	22 18 77
142.....	106	47	4,783.90	12 23 83
143.....	107	47	4,771.48	12 20 45
144.....	122	47	5,627.05	19 97 46
145.....	123	47	22,809.14	64 33 74
146.....	124	47	21,521.41	72 29 30
147.....	125	47	23,228.12	60 35 32
148.....	126	47	23,133.21	61 19 10
149.....	135	47	23,098.06	60 16 65
150.....	136	47	22,829.67	60 74 45
151.....	137	47	23,067.75	60 08 31
152.....	138	47	22,962.49	59 63 00
153.....	140	47	22,728.16	60 60 19
154.....	141	47	23,075.35	60 00 00
155.....	142	47	22,891.79	59 53 13
156.....	122	48	14.55	01 05 05
157.....	123	48	19,080.37	60 14 84
158.....	124	48	22,274.43	59 29 25
159.....	125	48	23,081.67	60 08 97
160.....	126	48	10,026.16	35 74 07
161.....	123	49	79.15	00 77 59
162.....	124	49	7,834.43	28 13 71
163.....	125	49	12,956.90	44 52 37
164.....	126	49	40.53	00 54 00
Total.....	.....	.....	3,357,333.49	10,545 04 16
Fractional *.....	125	49	340.66	9 10 49
Township and range line.....	.....	.....	.....	1,103 31 73
Grand total.....	.....	.....	3,357,724.15	11,657 46 38

\* Being part of old Sioux Indian reservation surveyed under direction of surveyor general of Dakota.

Number of acres surveyed since date of last annual report.....	3,357,724.15
Number of acres previously reported.....	25,921,032.64
Total number of acres surveyed.....	29,278,756.79

C. T. BROWN,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,  
*St. Paul, Minn., September 1, 1871.*

*D.—Abstract statement of the incidental expenses of the surveyor general's office for the fiscal year ending June 30, 1871.*

For quarter ending September 30, 1870 .....	\$673 25
For quarter ending December 31, 1870 .....	589 76
For quarter ending March 31, 1871 .....	421 06
For quarter ending June 30, 1871.....	512 93
	<hr/> 2,197 00 <hr/>

C. T. BROWN,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,  
*St. Paul, Minnesota, September 1, 1871.*

*D.—Report of the surveyor general of Dakota Territory.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
*Yankton, Dakota Territory, September 21, 1871.*

SIR: I have the honor to submit the following report, in duplicate, of the field and office work performed in this surveying district since the date of my last annual report, together with the usual statements relating thereto, and marked A, B, C, and D, accompanied by a map showing the progress of surveys in this district.

SURVEYS.

1st. The third standard parallel from the corner to township 113 north, ranges 48 and 49 west of the principal meridian, to the boundary line between the State of Minnesota and the Territory of Dakota; the seventh guide meridian west, from township 129 to township 144 inclusive; the seventh, eighth, ninth, tenth, twelfth, thirteenth, and fourteenth standard parallels from the Red River of the North to the seventh guide meridian, amounting to 239 miles, 71 chains, and 83 links.

2d. The township and range lines of townships Nos. 109, 110, 111, and 112 north, of ranges 47, 48, 49, 50, 51, and 52 west of the fifth principal meridian; townships Nos. 129, 130, 131, and 132 north, of range No. 47 west; townships Nos. 129, 130, 131, 132, 133, 134, 135, and 136 north, of ranges Nos. 48, 49, 50, 51, and 52 west; townships Nos. 137, 138, 139, and 140 north, of ranges 50, 51, and 52 west; townships Nos. 137, 138, 139, and 140 north, of ranges 48 and 49 west; townships Nos. 141, 142, 143, and 144 north, of ranges Nos. 49, 50, 51, and 52 west; townships Nos. 145, 146, 147, 148, 149, and 150 north, of range No. 49 west; townships Nos. 145 to 160 north, inclusive, of ranges 50, 51, and 52 west, amounting to 1,314 miles, 20 chains, and 82 links.

3d. The following-described 24 townships and fractional townships west of the fifth principal meridian have been subdivided into sections, viz: Townships 107 and 108 north, of ranges 49 and 50; township 108 north, of range 51; townships 102, 103, and 104 north, of range 53; township 102 north, of ranges 54, 55, and 56; townships 102, 103, and 104 north, of range 57; townships 103 and 104 north, of ranges 58 and 59; townships 101, 102, 103, and 104 north, of range 60; township 97 north, of ranges 66 and 67, amounting to 1,413 miles, 46 chains, and 65 links.

4th. The survey of 177 lots, containing 80 acres each, of the Yankton Sioux Indian reservation, amounting to 224 miles, 52 chains, and 74 links.

5th. The subdivision of a portion of the Ponca Indian reservation, amounting to 82 miles, 4 chains, and 94 links.

OFFICE-WORK.

1st. The field-notes of all the above-described surveys have been carefully examined and approved.

2d. Diagrams have been made and the field-notes transcribed of the surveys of the

above-described standard and township lines, and transmitted to the General Land Office.

3d. The field-notes of the subdivision of the above-described 24 townships have been protracted, triplicate maps of each one thereof been constructed, and the maps filed and transmitted, as required by law.

4th. Transcripts have been prepared and transmitted to the General Land Office of the entire field-notes of each of the 24 townships last above named, all of which have been carefully compared with the originals, and each has been prefaced by an index diagram.

5th. Lists descriptive of the land and all the corners of the above-named townships have been made, carefully compared with the original field-notes, certified, and transmitted to the proper local land offices.

6th. The field-notes of the survey of the 177 lots of the Yankton Sioux Indian reservation, before mentioned, have been transcribed, duplicate maps thereof constructed, and the transcript and map transmitted to the General Land Office.

7th. The field-notes of the subdivision of a portion of the Ponca Indian reservation have been transcribed in duplicate, and maps in triplicate constructed, and the transcripts and maps in duplicate transmitted to the General Land Office.

8th. The usual amount of miscellaneous business has been performed, such as preparing contracts and bonds, (in quadruplicate,) with instructions and diagrams of the exterior boundaries of their surveys for the use of deputies, making out and recording their accounts and the accounts with the Government, the general correspondence of the office, and recording the same, together with other work; all of which occupies a large amount of time, but of which no regular or detailed statement can well be given.

#### MISCELLANEOUS.

That portion of the Sioux Indian reservation in Minnesota between the Minnesota River and the western boundary of the State of Minnesota has been resurveyed under instructions dated August 27, 1870, the field-notes transcribed, descriptive lists prepared, and maps in triplicate constructed; the original field-notes, descriptive list, and original and duplicate maps transmitted to the surveyor general's office at St. Paul, Minnesota, and the triplicate map and transcript of the field-notes transmitted to the General Land Office. Under instructions of the Commissioner of the General Land Office, the original surveys of Bon Homme Island have been examined, and their condition reported to the General Land Office.

Contracts have been entered into to the amount of the appropriation for surveys in this Territory, for the fiscal year ending June 30, 1872, approved March 3, 1871, as follows, to wit:

1st. A contract for the survey of the third standard parallel from the seventh to the ninth guide meridian. The eighth and ninth guide meridians from the second to the third standard parallel, and a district of townships lines in the vicinity of and along the valleys of the Vermilion and Dakota Rivers; in all, amounting to \$4,400.

2d. Two contracts of five townships each, of subdivisions, in the vicinity of Big Sioux River, amounting to \$3,600.

3d. The balance of the appropriation (\$12,000) is divided into three contracts for subdivisions in the valley of the Red River of the North. The deputies are now in the field, and in due time will return their field-notes to this office. Deputy Moses K. Armstrong has completed the survey of the subdivisional lines of the 177 lots previously surveyed, of the Yankton Indian reservation, and returned the field-notes to this office; the maps are now being constructed and the field-notes transcribed, and will be forwarded at an early day.

The most favorable reports that have heretofore been made upon the agricultural capacities of Dakota have been surpassed in every particular by the steadily improving success. The facts of 1869 were in advance of previous claims. The crops of 1870 were fair wherever agriculture was attempted with anything like industry and skill, though the season was more unfavorable than any since the drought of 1864, which visited a large part of the Northwest. But the very obstacles of 1870 were of material advantage in several respects. Excellent success was achieved by scattered farmers in nearly every locality in the occupied part of the Territory. These successes were due to good farming; to tillage suited to the conditions of soil and climate. A better spirit was started and farmers quite generally accepted the lessons. The people had learned how to overcome difficulties, and by interchange of views and experience, and the commendable efforts of the newspapers of the Territory, a new and more successful era was inaugurated. Work was undertaken with confidence, and crops were planted with a more certain faith than ever before. It may be said that the farmers of Dakota are now almost for the first time prepared to cultivate the soil with a fair understanding of the methods required. The education in right methods is by no means yet complete nor sufficiently comprehensive, but all have far better theories toward which they work with more or less energy. With a season in many respects good but in some particulars



bad, the present year has been one of almost unqualified success. Compared with other regions of the same years this shows a decided gain for Dakota. If the present season could have been precisely foreseen, no one would have claimed in advance so fine a result.

The staple crops of previous years have shown great improvement, while several valuable experimental crops have given gratifying returns. While heretofore many have written and spoken with hesitation or actual doubt, now all will be prepared to testify favorably and with confidence. The importance of the subject to the nation and a large number of its people induces me to make again a somewhat general statement that will include the facts in regard to Dakota. Though the Territory is in the second tier of divisions west of the Mississippi, and not farther removed from the great lakes and their cities than others which have become States, Dakota remains even yet a comparatively unsettled region, without a thought of envy toward her successful sisters, being benefited indirectly by their gain, and feeling only a proper emulation; but realizing that her position of temporary disadvantage has tended to a more permanent disregard of her fine capabilities, Dakota now feels entitled to be understood. There is no doubt but there have been widespread impressions against Dakota in many respects. To contradict these errors the people had but slight opportunity; for though the nearest to the northern cities of all, Dakota has been visited by travelers, writers, and speculators, less than other Territories, unless it be Arizona or Washington. We have no railroad whatever, while continental lines traverse other divisions, and by their interests naturally and not strangely subsidize the commerce and press of the country. In other Territories the railroad was built first, and the settlement, if possible at all, was easy. Here the settlement was first, and the long slow years of difficulty were unavoidable before the people were able to build their own road. This in Southern Dakota they have taken steps to do, and aid has been so generously voted that the completion of one line of road is assured within another year. But when that is done the cheap lands will not lie freely along its route, and the visitor and immigrant, instead of finding a new land, will ride through a populous, improved region, with farms and towns, school-houses and churches, where lands will be of high value and no longer free. Dakota has no marked or peculiar features to attract the adventures of capital. There are no gold or silver mines, no great lakes or bays, no extensive forests of timber, except in the Black Hills, and it was not across the earlier overland routes. It was only accessible along the Missouri River. It was supposed to have a more unfriendly climate than it has in fact. It suffered from the same destructive visitations of grasshoppers and other insects which vexed the regions south and west of it. While the whole world knows that these have no longer troubled other localities, the information to the same effect in regard to Dakota has been very slow in reaching the public or in removing these prejudices from which Kansas and Nebraska no longer suffer. The comparatively small area here settled and cultivated has not given the products of Dakota much importance in the great markets. In addition to these facts Dakota suffered materially by the Indian outbreaks which inflicted such bloody devastation upon Minnesota, while the public mind is as slowly advised of the absence of this danger as that from insect pests. To complete the apparent difficulty the region west of the Missouri has been strictly devoted to congregated and allied bands of Indians, who by their reservations and presence form a barrier worse than a Chinese wall to the extension of lines of railroad. So not only railroads have not been aided in Southern Dakota, nor invited by free opportunity, but practically forbidden by insurmountable obstacles. There is now good reason to believe that some of these difficulties are evaded and the advance line broken. While they have been ample to account for the slow settlement of Dakota heretofore, it is hoped they cannot avail in future for many reasons. The first and controlling one of these is the Northern Pacific Railroad. This grand enterprise holds the authority and ability to open the through-route and trunk line to the Pacific. That road will pass through the northern half of the Territory. The opening of that line will render other enterprises possible. Several lines of railroad are already constructed westward from the Mississippi River in Iowa and Minnesota, but which have as yet no fixed western *termini*. The building of the Northern Pacific line will give direction and motive to others south of it that may touch Dakota. The Missouri River bears westward above Sioux City, Iowa, very decidedly giving room for a system of roads without the necessity of their touching the Indian country. Some hope and even confidence is naturally felt that good results will follow, and that railroads will soon enter the eastern part of the Territory.

Besides the Northern Pacific, which will pass three hundred and fifty miles through Northern Dakota, two other lines are projected and now vigorously advocated. The first is the Dakota Southern Railroad from either Sioux City or Lemars, Iowa, to Yankton. Yankton County has, by an almost unanimous vote, recently granted \$200,000 in aid of this line, and such other advantages are secured and contracts made as to give reasonable guarantees that the road will be completed by the autumn of 1872. The other line is projected from Sioux City, Iowa, northward, up the valley of the Big Sioux River, by the way of Canton and Sioux Falls, and through Eastern Dakota to

the Northern Pacific road. It would be difficult to find anywhere a more beautiful and valuable agricultural region than that to be traversed by this line, while its connections would be valuable and important. Propositions to vote aid have been carried by large affirmative majorities in Sioux City and other localities along the line to Sioux Falls, Dakota Territory. By the building of these two lines the development of South-eastern Dakota and the settlement of a wider area would be greatly facilitated. After these projects, a favorably received plan is to extend a line from Yankton, up the valley of the Dakota River, to the Northern Pacific line. This, or some similar line northward, through the great interior and rich prairie region, is highly desirable for every consideration. There are rich soil, fair water supply in lakes and brooks, and a liberal supply in many places of good building-stone. The grasses are luxuriant, and the whole region of high productive fertility. But there are no markets, except for stock, which can be driven. It becomes questionable if it will be possible to settle that rich region at all without a railroad first. To build this there are no citizens, and no civil organizations; no property to tax except United States land, and that exempt. The immediate region cannot, therefore, by any possible means, help to build a line of railroad. The next resource would be the already settled communities, or the ambition of towns and cities. These will liberally pay their means to build a road to them, in order to secure a market, but they are not rich enough to project speculative or out-reaching lines. It also seems a slow process to await the enterprise of Eastern capital in the present feeling in finances. Indeed the hope for such exercise of capital is not entertained unless some one of the lines already projected from the Mississippi shall hereafter seek a through-connection. These expectations are very remote. To one familiar with these long stretches of prairie, plain, and valley the argument in favor of a national subsidy of some amount in lands is apparently conclusive. The resident near a line of railroad, in the Middle or Western States, upon rich lands worth \$100 per acre, feeling some of the prejudices against great corporations, easily convinces himself that it would be mad economy to appropriate *such* lands to *such* a company, and the conclusion is quickly drawn against any aid whatever, under any possible circumstances. These sentiments now control the national policy. Under the effect of this Dakota suffers more than any other part of the nation, particularly Southern Dakota. It has no help whatever but its own. Wealth cannot be accumulated in any considerable amount, and under the circumstances the idea of self-help seems a *reductio ad absurdum*. The Missouri River, as far as the Yankton agency, has afforded such a highway as to enable the people along its valley, after ten years' labor and hardship, to aid, by long credit, in building a railroad. But for the vast interior region, from forty to one hundred and fifty miles north and northwest of Yankton, there is no such natural help. There is a broad area as fertile as Iowa or Kansas, Illinois or Minnesota, but no man can live there though he owned it all. The land is of no present value whatever, rich though it is. There is room for vast colonies of the world's people, upon richer lands than they ever tilled before; and, though it is offered without price, no one will take it. We call to the world and point them to our rich prairies and generous land laws. They look and acknowledge all, yet hesitate to act, but prefer to pay rent for smaller tracts near markets, instead of venturing beyond communications. Others cling to the cities and towns, subsisting from uncertain wages, in preference to making themselves the beneficiaries of Government land bounty under such circumstances. It is the high claim of the homestead policy that it makes us a people of small landholders. The principle has never been tried in a vast prairie region without railroads. Indiana, Ohio, and Michigan had coal, timber, and water-power in abundance, and settlers could maintain themselves. We have little but land. The settler will not take and retain that alone, though fertile as the flood-plain of the Nile. Hence, our settlements cling to the streams, and spread slowly over the more remote prairies. I do not intend, by any means, to argue against the beneficent land laws, which the people so justly prize, but I feel authorized to state the results of observation and experience of their practical workings here. The United States has built bridges across the streams which flow southward into the Missouri, and continues that policy. The settlers along the Missouri Valley have been benefited a little by the expenditures for their labor upon these, also by the payments made by the Government for transportation and other services paid for by the various Government officers and agencies. Without these slight helps and opportunities it is not too much to say that the present settlement would have been almost impossible. But when settlers must go beyond the range of these helps, and a distance of from fifty to one hundred miles from the Missouri, and over a hundred from the nearest railroad market, the difficulties become insurmountable. Visitors to remote settlements remark upon the small amount of land cultivated. Why should the settler plow more? He cannot sell the product, except to supply other settlers the succeeding year. He has no motive toward tilling many acres. The result is, he has much time which he cannot profitably employ, and many are found seeking vainly for labor. He is in all respects at a temporary disadvantage. For this long sacrifice he is only offered free lands. The immigrant is always most enterprising and hardy, and will labor long and



wait with much patience. But so far from market that his products are not worth the cost of delivery, his labor is unavailing and his waiting without an end. This point is hardly as yet reached in Dakota, and the building of a railroad to Yankton will extend the border of possible occupation; but even now it is easy to observe tendencies which would not be expected from a single view of the idea of free lands. The settlers are not generally persons of much property, and are compelled to seek their livelihood each year as it is required. It cannot be denied that some of them succeed in this with great difficulty. When any unusual misfortune or obstacle is presented to these they must yield. If a man has barely been able to build his small house, and own a team, wagon, and few farming implements, and has no market for his surplus labor or crops, and a single horse dies, it may decide his fate in the enjoyment of free lands. So we find men ready to sell their lands at small advance. This grows more frequent. If men with a little money are willing to pay the few hundred dollars asked, there is no rule of law to prevent. Individuals do not serve a public policy or sentiment by refusing a good bargain. It results that lands pass into the ownership of men who do not reside upon or cultivate them. This change of ownership is considerable in some localities, so that near our largest towns tracts become non-productive, and are held speculatively as much as if originally purchased directly from the Government. If this tendency increases in the next few years as it has in the past, precisely similar conditions will result here as have been complained of in regions where lands were taken in large tracts by cash entry. Claims have been sold repeatedly in Yankton County for not over \$50 to \$100 advance upon their cash cost to the pre-emptor from the Government. This separates neighbors and affects badly all social and civil organizations. Though very few settlers have ever left Dakota, yet I have heard many express a determination to do so unless better markets could be created. This leads to even desperate efforts to secure a railroad. Communities are generally unwilling to create heavy local debts for such purposes. Economists and jurists often, and even generally, are unfriendly to that use of the power of taxation. But claim-owners must either labor at disadvantage, and mortgage their homes, or place a debt upon all by law with a longer period to run. They prefer the latter for obvious reasons. Hence the almost unanimous vote of Yankton County at the recent election was a declaration of the great necessity that was upon the people. Ten years of free lands had not brought relief, and now twenty years are fore-reached by credit in order to solve the problem. While these difficulties are being combated, a sentiment springs up against the restrictive land laws which permit only the actual settler to buy. This is not dominant, but is repressed by the belief that the other system will yet avail. Still many declare their belief that our prosperity would be more vigorous if the public lands were proclaimed for sale, and they point to Iowa, Minnesota, Kansas, and Nebraska, for proofs. The best judgment of the people, however, objects to a general sale of lands, though they very much desire that more of it could be subject to taxation for civil purposes. They do, however, desire that the great land proprietor should aid in the development of its vast domain in Southern and Central Dakota. Political economy is not a sentiment, but is the best devised rule, founded upon practical experience. That experience in Dakota is every year stronger against the policy of absolute and entire reservation of the lands to settlers, who shall settle it first and help themselves afterward. If no railroad is built, in a few years more the end is reached. The proposition is reduced to something like these elements: The people cannot possibly occupy the interior lands and develop them without markets of sale and purchase. Not owning the lands, they will not build railroads first in order to reach them. They cannot remain upon them, nor make any money from them, with which to build roads. The separate individual settlers, without fortune, are not able to co-operate in any internal improvements. They are barely able to build school-houses or sustain schools in many localities remote from market. The Government fortunately holds the proprietary right to the unoccupied territory, and can better act now than settlers can ever co-operate.

Under the present system the per cent. of individual land-holders is decreasing and will continue to decrease; under the railroad system it increases. The result will be, the lands will not be taken; for 80 acres or 40 acres, or smaller tracts, are valuable near a market; 160 acres are nothing without present or prospective use. That is precisely the view upon which hundreds daily act, and decline to accept the remote lands offered in Dakota. Without further elaboration it can be safely stated that every moral or economical reason ever urged in favor of a grant of lands to aid a railroad exists now in full force in favor of aid to some lines across the unoccupied part of Southern Dakota. If our western border was unlocked, roads might be built by outside capital for purposes of through connections. As it is, north and south roads seem to be our only hope. The grant can limit the time and manner of disposition of lands by the road, and settlers prefer to take one-half as much land at double minimum price near a railroad line. They prefer that method to the only other possible one presented: to hold the lands many years without profit and then mortgage them for one-half their value to secure the road which a smaller grant would have secured earlier. It matters little to the settlers whether the Government gives them all and



they in turn donate a part, or the State in the first place donates a part when it has the unquestioned legal power to do so. In twenty years the latter policy is most economical for all concerned. Yankton County contains about 335,000 acres of land. Two hundred thousand dollars would pay for 160,000 acres at Government price, nearly one-half the land in the county. But this loan is at twenty years with 8 per cent. interest per annum. The total of interest and principal paid at the end of twenty years will be \$520,000, or \$100,000 more than the gross amount the Government will receive for all the lands in the county. The largest land-grant could not have taken over one-half the lands. The settlers have cultivated over one-fifth of the lands taken. They would have paid the Government the same amount for one-half as much as they received. The grant would have given us a road some years earlier. The intervening prosperity would have enabled every settler to buy as much more at current rates, and the aggregate wealth would now be fourfold what it is. As it is, the present outlay only gives a railroad to the center of the county. I see about me communities struggling hard to throw off their burden of disadvantage, and many individuals failing to reap any harvest of the Government land bounty. I have stated a few of the points of view as a matter of simple justice and truth. The sum of it all is, that valuable as the homestead and pre-emption laws are, they need to be supplemented by some practical measures that will make their benefits available to the poor and struggling settlers. Otherwise they may return to curse. The offer of free lands to the actual settler on distant prairies has always been without response, and as delusive to him as Selkirk's domain in solitude. It is mockery, and gives the most daring enterprise no foothold. Experience has proved that aid to railroads and the present land laws are necessary complements of each other, the only means of settling the domain and most economical for the people and the Government.

A general view of the geology of Dakota is simple and now fairly understood. By the accepted theory of the formation of the continent it had a regular growth. It began as an angulated ridge of land, between the region now occupied by the St. Lawrence and lakes and Hudson Bay, inclosing the latter in its obtuse angle. This gave general form to the continent, which grew by successive upheavals toward the south, southeast, and southwest. At the close of the age of reptiles, the shore line included New England, and extended to Trenton, New Jersey, inside of Delaware and Chesapeake Bays to the interior of South Carolina, and thence curved west and north to the mouth of the Ohio River. The Gulf extended northwestward to the base of the Rocky Mountains, which had risen from the sea. Further to the northwest the Gulf extended along what is the Upper Missouri and the McKenzie Rivers. The whole of the Upper Missouri region was then under this sea; our pre-emption claims were then water-lots, over which ships might have sailed long after the mountain-chain had risen from Alaska to Mexico. Dakota therefore grew from the northeast toward the southwest. There is little to be found older than the cretaceous. In the valley of the Red River of the North, salt-springs and streams have been discovered, which induces the belief that that valley plows its way down to the silurian rocks, as the salt-springs of the United States issue from that formation. From the Red River of the North we pass southwest over a broad cretaceous belt, and enter a newer formation when we cross the Missouri. This is the tertiary; and nearly one-half of Dakota is found to be no older than the tertiary belt along the Atlantic and Gulf, and not so old as most of the Pacific slope. The part known as the Bad Lands, west of the Missouri and extending into Wyoming, belongs to the tertiary group of the cenozoic system. There is a desolate geological sepulcher. The fossils are most interesting and remarkable. The surface has been cut by aqueous agencies into columns and buttresses, monumental domes, and massive walls with cathedral majesty. These are filled with fossil skulls, jaws, teeth, and thigh-bones of various races of mammals of which scarce a single species is familiar to the anatomist of the present day. The region in its other characteristics is forbidding. The water is brackish, and very bad. The earth is buried by the sun in summer, arid, ashy, and almost of chalky whiteness. It is a treeless waste, in winter the abode of snow and tireless storms, a domain of death and desolation. About the Yellowstone River was the last of the inland seas to be drained, and the most recent geological formations and fossils are there found. The only mountainous part of the Territory is the Black Hills, which lie in the southwestern quarter of the Territory, and extend into Wyoming. In these are precious metals, coal, iron, salt, and petroleum in large amounts, including the only valuable minerals known to the Territory, but from these the white man's enterprise is jealously excluded by the hostile prejudices of savage Indians. Some prominent journals in the Northwest are now advocating the opening of that region, and the sentiment is very general that too much land is devoted to Indians, besides the large amount from which the world is excluded by the barriers their reservations present. The splendid region of Southern Dakota is particularly harmed by this. Equally distant from the Northern and Union Pacific Railroads, it is backed by 25,000 Indians upon an extensive reserve, impassable by commerce. It is thus a *cul-de-sac*, without circulation, its only exit at its only entrance. Eastern Dakota belongs mainly to the cretaceous age. At Sioux Falls, however, there is an

upheaval of azoic rocks over which the Sioux River passes, descending 100 feet in about half a mile. This rock is now known to scientific men under the name of Sioux quartzite. It is very hard, being one of the most perfectly metamorphized rocks known to science. It is from a rosy to a flesh-red color. At Sioux Falls it is nearly horizontal, dipping at a very slight angle to the south or southwest. The river at this point flows nearly due north by a long S-shaped curve. Neither the upper nor lower limit or surface of the rock has been accurately determined, but the facts known show it to be four hundred feet in thickness, and it may be much more. It is also found at the north-west point of Iowa, and at places east and northeast of Sioux Falls. It also appears at intervals west of these for fifty miles, and is largely exposed on the Dakota River in township 101, of range 58 west. It was metamorphized from a pure sand by powerful igneous agency. The red pipe-stone of the Indians was changed at the same time from small pockets or drifts of fine pure clay, lying between the larger masses of sand, and both received their color from iron. A reddish-colored sandstone is found in large amount along the Dakota River for many miles, but does not appear until about twenty-five miles above Yankton. It is abundant, easily quarried and wrought, and very useful for all building purposes. The Sioux quartzite is strictly an unstratified rock, but is divided often quite regularly by transverse lateral and vertical rifts. It breaks by reason of these into rough blocks and slabs, rendering it available for most substantial and enduring building. It cannot be finely dressed, but is proof against time and elemental erosion. It was used by the Army in the construction of the barracks at Sioux Falls and at Fort James on the Dakota River, and is now employed usefully in building. In the absence of hard limestones and other stratified economical rocks it must become valuable for foundations, exposed walls, and heavy substructures. Along the Missouri, and particularly at Yankton and above, is the chalk rock, as it is commonly called. It is a soft, white, or blue-tinted impure carbonate of lime. It has some other alkalis in its composition. It appears in considerable amount in the hills along Clay and Turkey Creeks, in the northeastern parts of Yankton County. When exposed to water and freezing on the surface of the ground it decomposes slowly, and is slaked to a fine impalpable powder, and when wet has a soft and soapy feel. It does not produce good lime. It has, however, been employed considerably in building, and is durable when placed above the ground upon good foundations. A few of the most substantial residences in Yankton are built of this material and present a fine appearance. It is easily quarried in immense amount, and rapidly sawed into any desirable shape. This rock has doubtless yielded largely to the ingredients of our soil, where it is finely comminuted and intermingled with other mineral and vegetable decompositions. In sinking wells in various parts of the Territory persons have found lumps supposed to be pure lime; but I find them to be pieces of this rock widely scattered with the drift formation, but nearly all decomposed. Fossil fishes and shells, with sharks' teeth in great numbers, are found in the chalk rock and the dark-red sandstone on the Dakota River, while the Sioux quartzite is clearly without fossils of any kind. From Sioux Falls to the edge of the chalk rock, in Yankton County, is not more than fifty miles, while the cretaceous formation extends eastward into Iowa for some distance. Between these is included, in theory at least, the silurian, Devonian, and carboniferous systems. We are, therefore, not denied the hope of discovering coal. But over the whole area is spread the deep drift formation, with a gently undulating prairie surface, which has no precipitous bluffs or deep ravines to expose the actual succession of rocks. Only in the places mentioned do the rocks named appear at the surface, though search for coal is soon to be made by an organized company at Vermillion. They are preparing for deep boring at different points. It is feared, however, that the coal-bearing rocks are pinched out, as in northwestern Iowa, and that coal may be found, if at all, only in detached and isolated outlying pockets. Previous reports have given correct descriptions of the surface, soil, and climate of Dakota. Since that time, however, surveys have been extended nearly two hundred miles along the Red River of the North. It is hardly possible for this report to add anything to the knowledge of the country in regard to that magnificent body of lands. It is now receiving, and will continue to receive, the notice of the country. It will also be soon settled by reason of the railroad enterprises to reach it the present summer.

All reports received from several deputy surveyors of good judgment and much experience, and from many reliable sources, unite in proving it a very rich, level or gently undulating region of the highest character for agriculture, and, more than any other part of the Territory, favored with timber and water. With many windings the general course of the river is north, and it receives numerous tributaries from Dakota, several of which are streams of good size. These have pure water, and along all of them are heavy belts of timber of hard varieties. The streams from Minnesota and the two lines of railroads soon to be completed to Red River, will furnish a cheap and abundant supply of lumber and other commodities, while giving markets for products. These railroad lines invite the hardy northern immigrant to grand opportunities. A glance at the map shows the valley on the Dakota side to be about 200 miles long and 40 miles wide. There is a body of 8,000 square miles of first-class agricultural



lands. The traveler over the great West knows facts which are not always written. One of the most important of these is that our western border of settlement from north to south is closely approaching a region where agricultural lands yield to mountains, basins, elevated valleys, and alkaline tracts. The lands suited to agriculture must there be irrigated to produce. Water is not even always present for such use. The traveler is often deceived because he rides upon railroads which follow the valleys. These carry narrow breadths of good land much farther west than the general body. The buffalo made the routes first, because of the grass and water; the trapper followed the buffalo, the overland migrations were piloted by the hunters, and the railroads followed the same routes for similar reasons—for water, smooth route, and the little timber. Every observing visitor will testify how narrow is the belt of lands at the foot of the mountains, reclaimable by irrigation, and valuable for agriculture, even in Utah, where it is most successful. Yet Salt Lake City is 4,200 feet above sea-level, and the rest of the Territory more elevated. What more can be said of the vast central regions of this mountainous country? I recently conversed with an educated gentleman, correspondent of a leading daily, who has visited and studied every part of the West, and he declared that from the meridian of  $101^{\circ}$  of west longitude to the western slope of the Sierra Nevada Mountains, and from far toward our northern line to the Mexican border, there was not one acre in ten that was fit for agriculture or for any use of civilized man, except in mineral wealth. There is nearly a million square miles of the West not agricultural in character; but it is rich in untold mineral wealth. The immigrant there should go for gold and silver. In that way lies fortune. But the agricultural immigrant cannot go west of longitude  $101^{\circ}$ , except in narrow valleys, on high table-lands or elevated mountain depressions, and must generally employ irrigation, and to do that must go with colonies and co-operate with others in water-rights. The direction of the future great migrations in this country must be toward the northwest. In Central and Eastern Dakota lies a great body of untouched fine agricultural lands, where farming can be done by the ordinary modes, and where the settlement can be continuous. Much of these lands cannot now be reached, and never can be developed, except by railroads. The Northern Pacific Railroad will open a large body of them, including the Red River Valley and westward to the Missouri. The route lies south of the forty-seventh parallel of north latitude. Upon this route it does not pass the valley of the Cheyenne, a tributary of the Red River, for sixty miles, nor the upper valley of the Dakota for fifty miles farther, and thence over a general plain to the Missouri. This line is crossed in Central Dakota by the isothermal line of  $70^{\circ}$  average summer temperature, which passes through Philadelphia, Pittsburgh, Chicago, and Southern Minnesota. This gives a guarantee for summer crops of great variety. But it must not be supposed that summer and winter isothermals are identical, and that the winters are wholly genial and moderate. The winters are longer than at the places named, and there are periods of more severe cold; but by universal testimony this cold is not so severely felt as higher temperatures farther east. Moist cold goes to the marrow through doubled woollens. Dry cold air, like that of the winters in Dakota and Minnesota, touches the surface only, and in the healthful causes a ruddy glow. On wet cold days men shiver before fires, while upon dry cold days they rejoice in manly exercises. Men constantly bear witness to the fact that they are less affected by these northwestern cold winters than by the higher temperatures in Illinois, Indiana, and similar regions, where they are attended by moisture in the air. The winters of the far northwest are free from sudden changes than those farther east. The winters here are more uniform, and the changes occur below the freezing-point generally, and not from below freezing to above, releasing moisture by the thaw, and then suddenly freezing again. Changes from above freezing to below are always more unpleasant than those which occur below the freezing-point. The atmosphere and soil are dry. The effect of such cold is tonic and invigorating, while warmer and changeable climates lower the tone of the physical system, doing as much harm as good. Damp soil and excessive shade, with frequent changes of weather, develop lung and malarial diseases. Our distance from the coast gives a comparatively dry winter. The last was remarkably so, besides being comparatively mild and free from storms of great severity. By long observations it is found that Minnesota has a winter rain-fall (including melted snow) of but two inches. It is probable that of Dakota is no more. The northern coast States have a winter fall of ten inches of moisture. Here the major part of the rain-fall is in the summer. Blodgett's "Climatology" states that at St. Paul there is a period of one hundred and forty-eight days, from the 24th of October to the 20th of March, during which vegetation is dormant—that is, there is that much winter. The Smithsonian Institute records show for St. Paul a winter temperature averaging a few degrees lower than that of Utica, New York, while its summer temperature is as much higher.

Intelligent statements recently made maintain that for the past few years the severity of Minnesota winters has been much relaxed. There is no doubt a greater difference in the far northwest between the mid-winter and mid-summer temperatures than in more eastern States, while at one point in Florida the variations throughout a year were only  $20^{\circ}$ —from  $60^{\circ}$  to  $80^{\circ}$ . The greatest difference I can find recorded was



at St. Paul, where the change was  $122^{\circ}$  in 1870—from the lowest,  $23^{\circ}$  below zero, February 20, to the highest,  $99^{\circ}$  above zero, on the 29th of June. These are, of course, extreme days of somewhat extreme seasons. We maintain these various facts, and cite Minnesota records as being the nearest like those to be expected of Northern Dakota. It is claimed, however, by intelligent observers, that the conditions improve farther west in Dakota. We have already stated that this cold is not sensible practically to such a degree upon the physical system; and on the other hand the high summer temperature is modified greatly in its phical effect by other conditions, while its good effect on crops is the same. These are mainly the comparatively dry soil and air and the prevailing breezes. There is great difference in the effect of heat between the low countries at sea-level and those elevated rolling plains 1,000 to 1,500 feet above sea-level and nearer the mountains. Long-continued sultry weather is here almost unknown, but each day or evening is almost always refreshed by pleasant breezes. Indeed, the only times when the heat becomes oppressive in Southern Dakota are when the air-currents of the Gulf, deflected northward along the mountains, occasionally reach here for a day or two. They are sometimes for several hours hot and parching; but they occur rarely, and only in the early summer. But the true rule for invalids who seek a change of climate is founded upon a professional judgment of their condition. To those whose constitutions are originally feeble, or who are already so far reduced that they cannot bear that exercise and exposure which will be responded to by a reaction and glow of blood, these cold climates are not desirable; but when the system has the vigor left to exercise in the wintry air, with increased appetite and without numbness of the extremities, and with a tonic reaction from the cold, this is the best climate for it. We believe this is the general experience. The climate is so free from miasma and the air so fresh and pure that many persons previously invalid may here be restored to vigorous health; and it is entirely safe to say that the climate will be enjoyed by nearly all from the more northern States and those from the north of Europe, who make up our population. We have written specially about the climate of Northern Dakota. Upon the Missouri slope the conditions are favorably modified in many respects, giving an earlier spring, a late autumn, and admitting the same variety of agriculture as in Iowa, Northern Illinois, and Southern Wisconsin. Many erroneously suppose that the elevation increases toward the north nearly as much as toward the west. This has also an important bearing upon the productive fertility of the country. Toward the north and northwest there are no mountain ranges. The streams which flow south to the Gulf and north to Hudson's Bay interlock in Dakota and Minnesota. Lake Itaska is 1,500 feet above sea-level, but the Red River at Fort Abercrombie, south of the Northern Pacific crossing, is only 1,000 feet above sea-level. The Red River becomes lower, of course, northward to Lake Winnipeg. Thus the source of the Mississippi could be drained into Red River. The Missouri River, at the mouth of the Big Sioux, at the southeastern corner of Dakota, is hardly 1,200 feet above the sea; Sioux Falls and Yankton are each elevated about 1,550 feet. We believe there is no point along or near the eastern line of Dakota that reaches 1,500 feet in elevation; west of that the elevation is but slightly increased until after the long valley of Dakota River is passed, from which the ascent is regular to the mountains. Hence for all Eastern Dakota the elevation is not such as to badly affect products or climate, and a favorable influence is gained from its low elevation compared to the great region of the West. We are in a part of a grand continental valley, that of the Mississippi and Missouri, extended by the Red, the Saskatchewan, and McKenzie, through to the north. Where the Northern Pacific passes the Rocky Mountains they are lower, having wide plateaus and broad passes. Through these we no doubt have at some seasons the tempering effect of the great Pacific trade-winds and ocean-currents which bear upon the shores from Oregon to Alaska. The products of Dakota vary with its different latitudes, but not very considerably. In the north the smaller grains and potatoes, with a great variety of vegetables, are grown with success. It is not yet fully tested whether the valley of the Red River will produce and mature corn regularly. The culture of that product will probably be confined to the earliest and smallest varieties. But for wheat, oats, rye, barley, potatoes, and similar crops, the region is unsurpassed, probably, on the continent. The change from winter to spring is rapid, and twenty days after the disappearance of snow various plants commence their growth. Vegetal growth is very rapid in the longer and warmer summer days. The soil is of the finest character, and with proper treatment yields most abundantly. Agriculture is not yet general, and two years more will probably be required before a large area will be cultivated; but thereafter the crops of cereals from that region will be important in the world's markets. A careful record kept by the officers at Fort Abercrombie shows that for fifteen years five months in each year have been absolutely free from frost. Wheat grows with wonderful vigor, and is full and heavy. Strawberries, raspberries, whortleberries, cranberries, plums, and similar wild fruits, are native to the soil there or near there, in Minnesota. Immigration to that part of Dakota will be very heavy next year and thereafter. From what I learn it has already commenced, and some confusion and contests are already manifest. Until the fall of 1871 no subdivisional surveys have been made, and the demand for

them is constant. Numerous signed petitions have been received from various points for surveys along Red River. It was deemed best to expend the small amount available for surveys upon a continuous body of lands. The necessity for surveys will be very great there next year, and it seems that public policy should authorize work to commence before the beginning of another fiscal year. All the land surveyed will be taken this fall. The wide-spread reports of that region will attract a vast crowd, and it is best for settlers to consider the difficulties they must unavoidably meet. They can go there and stay profitably and comfortably, but they cannot do so without considerable preparation. They go to an entirely new country. The crops of this year are as nothing to supply the vast throng. They must go early to secure anything like a crop the first year. They must have a house and some other improvements. They must live, and the utmost economy costs something. There must be patience, toil, and hardship, and not simply summer leisure. The railroad will greatly help, and comfort will soon begin, and prosperity follow. This much of warning is necessary because, from what I learn, there is already discomfort because of the crowd that has gone in advance of the railroad. Enough will certainly go, and go soon enough, and if they go prepared, will not regret it. In Southern Dakota the agricultural success has been very fine in every occupied part. Wheat, corn, oats, barley, and potatoes, have yielded magnificent crops. The crops have not been troubled by insects to any noticeable extent. While the previous years have established the success of all the small cereals and hardy vegetables of every kind, there was not the same confidence generally felt in the successful cultivation of corn. This, however, increased, and a large area was planted this year with the most gratifying results. Many varieties have been tried under variable conditions and kinds of soil, and the entire crop has now ripened without injury from frost. In Yankton County, upon one farm, 80 acres of sod was broken for the first time last spring, and immediately planted to corn. The yield has been 50 bushels per acre without cultivation, which is impossible upon sod land. Other tracts heretofore cultivated have yielded 60 to 70 bushels per acre. Oats have averaged generally in the Territory from 35 to 70 bushels per acre, varying with the preparation of the soil. Potatoes have yielded immense crops, varying from 100 bushels to 400 bushels per acre. Wheat has returned large yields in almost every instance. Those fields which were recently broke and not deep plowed have not thrashed over 12 to 15 bushels per acre, but generally the crop has averaged from 18 to 25 bushels per acre, while many single cases have reached 35 bushels per acre. I think the crop in Yankton County four times what it was in 1870—double acreage and double the average yield. The increase was greater than this in corn and potatoes. One important experiment was repeated this year: Mr. John Thompson, who has a farm ten miles east of Yankton, in the Missouri Valley, planted some winter wheat in the fall of 1869, and gathered a fair crop in 1870. He repeated the trial upon about 25 acres of land. This was sowed in the fall of 1870 under disadvantages. Having no heavy drill, he sowed the wheat broadcast, and plowed it under in order to secure deep planting. The wheat withstood the winter frosts without injury, grew favorably in all respects, and was not injured by insects, rust, or other enemy. Just as it was ripe and ready to harvest a narrow belt of country was visited by a hail-storm which seriously affected this wheat. The yield was, nevertheless, 20 bushels per acre, and of a superior quality. It produces superior flour in large per cent. better than the winter-wheat flour shipped here from St. Louis. These and other small experiments under varied circumstances are regarded as settling the question in favor of winter wheat as a crop in Dakota. The soil, climate, dry winters, and all conditions are precisely suited for it. The soil, from its composition, is not badly affected by freezing for winter wheat. The only needs are deep plowing and drills, with hoes or teeth of double the weight used in clay soils, so as to plant the grain deep. With these two facts I certainly expect a revolution from spring-wheat to winter-wheat raising, which will have a marked effect.

A circular was issued from this office and sent to various persons throughout the Territory, but for some reason very few have replied to it, so that I cannot present aggregate statistics or averages. Mr. Benton Fraley reports very favorably from Bon Homme County. He states that land used several years produces the best crops, and this is the general experience. It is the amount of new land that reduces averages. The better class of corn will average 40 bushels, and of <sup>oats</sup>, 25 bushels per acre. Farmers in Bon Homme County regard deep breaking of <sup>sod</sup> preferable, as it produces better crops at once. Millet produces a good crop, and white clover has been tried with considerable success. Cottonwood and other forest trees grow more thrifty upon land thoroughly cultivated than upon recent breaking. Good crops of sod corn have been raised. Mr. Jonathan Brown, of <sup>the</sup> county, has raised about 40 bushels of corn per acre every year since 1865. William Falls raised a heavy crop of sod corn. Potatoes produce 250 bushels per acre under good cultivation. Garden vegetables reach almost a mammoth growth in the deep light soil. Sweet potatoes have been raised with success in various parts of the Territory. Clay County has an advanced region in successful agriculture, and now has more farms than perhaps any other county for its size. The crops of <sup>the</sup> present year are generally fine, with a large increase both in area and average yield. There are some extensive farm-



ers in this county. Prominent among them for enterprise is Hon. James McHenry, who raised 8,000 bushels of wheat upon 330 acres. Union County is in the southeast corner of the Territory, and being near the Sioux City market, has many advantages, and has rapidly advanced in population, productions, and wealth. It contains a superior body of lands, and has an abundant supply of timber, it being the only county in the Territory where good prairie farms are more valuable than timber lands, which can still be purchased for from \$10 to \$20 per acre. Lincoln County, upon the Sioux River, has received a large immigration during the present summer. Hon. William M. Cuppett states that the area cultivated this year is threefold that of last year. Some wheat thrashed has yielded 23 bushels per acre, and oats 64 bushels per acre, but not enough was thrashed to reach a general average. Mr. I. N. Martin, of Canton, has five acres of *Dent* corn, estimated to yield 70 bushels per acre; and from it seed corn was gathered by the middle of August, a month before frost. Mr. Gehon planted early Rose potatoes about April 10, which produced single ones weighing 14 ounces on June 24. Hon. H. A. Jerauld, of Eden, in the same county, says one-half of the crop this year was upon sod in his township. Nearly all of it was also harrowed in, and much seed was not covered, and a light crop resulted. That sowed by cultivators and drills yielded much more. The majority of the farmers prefer to break sod as thin as the plow will run, but it is not stated that the deep breaking has been tried. The first settlement at Eden was in 1868, in which 154 acres were broken in that township. In 1869 there were 230 acres broken, 365 acres in 1870, and 410 acres in 1871, which is perhaps better than the average improvement. The following averages are given from actual measurement each year, and are valuable in further illustrating the improvement in production: Of corn, there were 13 acres in 1869, yielding 26 bushels per acre; 20 acres in 1870, yielding 28 bushels per acre; and 161 acres in 1871, yielding a far heavier crop. Of wheat, there were 158 acres in 1870, averaging 12½ bushels per acre; and in 1871, 186 acres, averaging 16 bushels per acre. Oats have increased from 13 acres, averaging 13 bushels per acre, to 127 acres, averaging about 40 bushels per acre. Barley, potatoes, and other crops, have yielded well. That shows the agricultural picture of a community just commencing on the wild prairie and struggling upward, forty-five miles from a railroad. In that enterprising community some special crops were tried. Mr. W. E. Brown raised 10 acres of broom corn, which yielded 700 pounds per acre of excellent quality. Buckwheat and sorghum were successfully raised. Mr. R. S. Collins, formerly a Connecticut tobacco farmer, raised this year 200 tobacco plants of the broad leaf variety, and of superior quality. This and other experiments convince good judges that tobacco may be profitably cultivated on our warm rich soils. Mr. A. B. Wheelock has 13,000 soft maple trees, 75 European larch, and 50 Norway spruce, in flourishing condition. Messrs. E. C. Gray and William Knight have successfully raised timothy and clover seed, and much tame grass seed will soon be sowed. Sweet potatoes were also successful. Mr. Jerauld closes his report by the statement that the upland prairies stand the dry weather, when they have it, better than the river bottoms—a fact which, like many of the others mentioned, would not have been believed even two years ago. Mr. Newton Clark, of township 101, range 50 west, in Minnehaha County, sends a brief report, which shows good success in the staple crops, though this is the first year of agriculture there, and but little of the breaking was done until the spring of 1871. Of the Fife wheat, 20 bushels per acre have been raised; and of corn, 40 bushels per acre. He has 2,000 apple grafts, which are doing well, the best of which are the Cogswell variety, while the growth of Delaware, Concord, and Rogers' Hybrid grapes is flattering. Mr. Henry Maxwell reports an equally successful beginning in Hutchinson County, in the Dakota Valley, north of Yankton. This valley is very fine. Settlements have commenced for fifty miles above Yankton, and the great advantages will attract a large immigration next year. Turner is a new county, north of Clay and west of Lincoln, in the beautiful valley of the Vermillion, and settlements are rapidly increasing there. It is a region of superior lands. Lincoln and Minnehaha Counties have received heavy immigration this year, and large bodies of most valuable lands remain west of Eden and Canton, in Lincoln County, and north and northwest of Sioux Falls, in Minnehaha. These regions are now much favored by the cheap lumber and better markets afforded by the St. Paul and Sioux City Railroad, which passes east of them, while great confidence is felt in the early construction of the railroad from Sioux City to Sioux Falls. In previous reports full descriptions are given of the Territory, and we have added such general and detailed facts, of unquestioned authority, as will enable persons to reach a just conclusion in regard to Dakota. There is room for many, who, if they come with spirit and industry, may rely upon success. The railroads projected, and others relied upon to be built, will conclusively assure the great prosperity of the Territory, which is far better in climate, soils, and resources, than many have been willing to believe, and which has not heretofore received the attention it has deserved.

Papers accompanying and forming a part of this report:

A.—Estimate for the surveying service in this district for the fiscal year ending June 30, 1873.



B.—Abstract account of the incidental expenses of the surveyor general's office for the fiscal year ending June 30, 1870.

C.—Statement showing the number of townships surveyed in Dakota, and area of land therein.

D.—Statement showing the amount, character, locality, and present condition of the surveys in Dakota, uncompleted at, and undertaken since, the date of my last annual report.

Very respectfully, your obedient servant,

Hon. WILLIS DRUMMOND,

*Commissioner General Land Office, Washington, D. C.*

WILLIAM H. H. BEADLE,

*Surveyor General.*

A.—*Estimate of appropriations required for continuing the public surveys in the Territory of Dakota, for salaries of the surveyor general and the clerks in his office, (as per act of March 2, 1861,) and for the incidental expenses of the office, for the fiscal year ending June 30, 1873.*

For surveying standard parallels and guide meridians.....	\$18,000 00
For surveying township lines.....	20,000 00
For subdividing 170 townships.....	62,000 00
<b>Total for surveys.....</b>	<b>100,000 00</b>
For salary of surveyor general.....	\$2,000 00
For compensation of clerks in the office of the surveyor general.....	\$6,300 00
For rent of office for the surveyor general, fuel, books, stationery, and other incidental expenses.....	\$2,000 00

WILLIAM H. H. BEADLE,

*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,

*Yankton, Dakota Territory, September 21, 1871.*

B.—*Abstract statement of the incidental expenses of the surveyor general's office for the year ending June 30, 1871.*

For the quarter ending September 30, 1870 .....	\$461 93
For the quarter ending December 31, 1870 .....	444 25
For the quarter ending March 31, 1871 .....	301 65
For the quarter ending June 30, 1871 .....	535 66
	<b>1,743 49</b>

WILLIAM H. H. BEADLE,

*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,

*Yankton, Dakota Territory, September 21, 1871.*

C.—*List of townships surveyed in the Territory of Dakota from July 1, 1870, to June 30, 1871.*

No.	Township.	Range.	Area.	No.	Township.	Range.	Area.
1	107 N.	49 W.	22,995.45	16	104 N.	58 W.	23,615.16
2	108 N.	49 W.	22,812.33	17	103 N.	59 W.	23,021.07
3	107 N.	50 W.	22,961.74	18	104 N.	59 W.	23,509.65
4	108 N.	50 W.	22,821.86	19	101 N.	60 W.	23,034.22
5	108 N.	51 W.	22,319.79	20	102 N.	60 W.	23,023.58
6	102 N.	53 W.	23,019.65	21	103 N.	60 W.	23,005.83
7	103 N.	53 W.	22,996.26	22	104 N.	60 W.	23,463.45
8	104 N.	53 W.	22,938.23	23	97 N.	66 W.	4,818.50
9	102 N.	54 W.	23,196.56	24	97 N.	67 W.	14,167.39
10	102 N.	55 W.	22,897.84				
11	102 N.	56 W.	22,298.01				525,134.71
12	102 N.	57 W.	23,121.34	268 previously reported .....			5,040,400.64
13	103 N.	57 W.	23,270.68	Total acres surveyed.....			5,565,535.35
14	104 N.	57 W.	22,665.75				
15	103 N.	58 W.	23,155.17				

WM. H. H. BEADLE, *Surveyor General.*

SURVEYOR GENERAL'S OFFICE,

*Yankton, Dakota Territory, September 21, 1871.*

D.—Statement showing the amount, character, locality, and present condition of the surveys in Dakota, uncompleted at and undertaken since the date of the last annual report.

Name of deputy.	Date of contract.	Character of work.	Estimated cost of survey.	Cost of survey.	Locality.	Present condition.
Moses K. Armstrong.....	Dec. 16, 1869	Subdivisions.....	\$5,000 00	.....	Subdivision of a portion of the Yaneton Indian reservation for the purpose of allotment to such members of said tribe of Indians as desire to have lands set apart to them in severally.	One hundred and seventy-seven 80-acre lots have been surveyed and notes and plats transmitted. Under subsequent instructions these lots have been subdivided, the field-notes returned, but not yet platted or transcribed.
George N. Propper.....	August 8, 1870	Standard and township lines.	.....	\$3,191 31	Between the eleventh and thirteenth standard parallels, and between the seventh guide meridian and Red River.	Survey completed and approved, and notes and plats transmitted.
Miles T. Woolley.....	August 10, 1870	Township lines.....	.....	3,468 97	Between the seventh and tenth standard parallels, and between the seventh guide meridian and Red River.	Survey completed and approved, and notes and plats transmitted.
Richard F. Pettigrew..	August 15, 1870	Subdivision lines.....	.....	1,842 97	Townships 107 and 108 north, of ranges 49 and 50, and township 108 north, of range 51 west, of the fifth principal meridian.	Survey completed and approved, and notes and plats transmitted.
Augustus High.....	August 16, 1870	Subdivision lines.....	.....	1,810 03	Township 103 north, of range 59, and townships 101, 102, 103, and 104 north, of range 60 west, of the fifth principal meridian.	Surveys completed and approved, and notes and plats transmitted.
James V. Banker.....	August 16, 1870	Township lines.....	.....	1,650 19	Between the second and third standard parallels of ranges 47 to 52, inclusive, west, of the fifth principal meridian.	Surveys completed and approved, and notes and plats transmitted.
Rollin J. Reeves.....	August 17, 1870	Standard and township lines.	.....	3,258 30	Between the seventh and eleventh standard parallels, and between the seventh guide meridian and Red River.	Surveys completed and approved, and notes and plats transmitted.
Horace J. Austin and John Lawrence.	August 31, 1870	Subdivision lines.....	.....	4,537 38	Townships 102, 103, and 104 north, of range 53; township 102 north, of ranges 54, 55, 56, and 57; townships 133 and 104 north, of range 57; and township 104 north, of range 59 west, of the fifth principal meridian.	Surveys completed and approved, and notes and plats transmitted.
Augustus High.....	May 13, 1871	Subdivision lines.....	.....	210 85	Township 97 north, of ranges 66 and 67 west, of the fifth principal meridian.	Surveys completed and approved, and notes and plats transmitted.
Ogden Marsh.....	June 2, 1871	Subdivision lines.....	.....	492 36	Subdivision of a portion of the Ponca Indian reservation into 80-acre lots.	Surveys completed and approved, and notes and plats transmitted.
Miles T. Woolley.....	June 27, 1871	Standard and township lines.	4,400 00	.....	Between the first and third standard parallels, and between the seventh and ninth guide meridians, west, of the fifth principal meridian.	Deputy in the field.

Joseph W. Blanding ...	June	23, 1871	Subdivision lines .....	4,400 00	.....	Fractional townships 138 to 142 north, inclusive, of range 48; fractional townships 138 to 144 north, inclusive, of range 49; and townships 137 to 140 north, inclusive, of range 50 west, of the fifth principal meridian.	Deputy in the field.
Richard F. Pettigrew ...	June	29, 1871	Subdivision lines .....	1,800 00	.....	Township 112 north, of range 50, and townships 109, 110, 111, and 112 north, of range 51 west, of the fifth principal meridian.	Deputy in the field.
James C. Blanding and John Q. Burbank.	June	30, 1871	Subdivision lines .....	3,530 00	.....	Townships 141, 142, 143, and 144 north, of range 50; townships 137, 138, 139, 140, and 141 north, of range 51, and township 136 north, of range 52 west, of the fifth principal meridian.	Deputies in the field.
Horace J. Austin .....	June	30, 1871	Subdivision lines .....	4,070 00	.....	Townships 132 and 133 north, of ranges 47 and 48; townships 134, 135, 136, and 137 north, of ranges 48 and 49; townships 135 and 136 north, of range 50; and township 136 north, of range 51 west, of the fifth principal meridian.	Deputy in the field.
Ole B. Iverson .....	July	13, 1871	Subdivision lines .....	1,800 00	.....	Townships 109 and 110 north, of range 49, and townships 109, 110, and 111 north, of range 50 west, of the fifth principal meridian.	Deputy in the field.

WM. H. H. BEADLE,  
Surveyor General.

SURVEYOR GENERAL'S OFFICE,  
Yankton, Dakota Territory, September 21, 1871.



*E.—Report of the surveyor general of Nebraska.*

SURVEYOR GENERAL'S OFFICE,  
Plattsmouth, Nebraska, September 25, 1871.

SIR: In compliance with your instructions of April 7, 1871, I have the honor to submit herewith (in duplicate) the usual annual report of the surveying operations in this district for the fiscal year ending June 30, 1871.

## SURVEYS.

All surveys contracted for out of the appropriation of July 15, 1870, have been completed both in the field and office; also contract No. 30, of Messrs. Paul & Gilbert, for the survey of standard lines, made July 26, 1869, out of the appropriation of March 3, 1869, upon which the time was extended until August 1, 1870.

Out of the special deposits made by the Union Pacific Railway, July 21 and October 6, 1869, there have been surveyed contracts Nos. 38 and 39.

Out of the special appropriation of April —, 1871, for the benefit of William Hardin, there has been surveyed contract No. 40. The total cost of surveys in the field during the year has been \$53,286 23.

Eight contracts have been entered into, for the survey of the public lands, out of the appropriation of March 3, 1871. The districts embraced in these contracts have been selected with reference to the wants of settlers and the interests of the Union Pacific Railway, in compliance with your general instructions of April 4, 1867. Advance returns of some of these contracts have already been received, and all of them are nearly completed in the field.

In the valley of the Republican River, the presence and unfriendly attitude of Spotted Tail's band of the Sioux has materially impeded the prosecution of the surveys. One party, that of Messrs. Daugherty & Cutler, were driven from their district to the line of the Union Pacific Railway, by these Indians, about the 7th of last month, but, receiving a strong escort of soldiers from General Augur, immediately returned and resumed work.

## PROPOSED SURVEYS.

I have prepared, and submit herewith, the usual estimate for surveys in the district for the fiscal year ending June 30, 1873. The amount given therein, although in excess of former appropriations, is required, to extend the surveys to keep pace with the rapid advance of the settlements. The surveyor has been followed so closely by the settler the present season that in many instances the deputies report the lands in their district of surveys occupied as fast as the lines are established.

The surveys proposed include subdivision, exterior, and standard lines, and the survey and establishment of the boundary line between Nebraska and Dakota. In selecting the territory embraced in the proposed survey, I have been governed by the demand for lands for settlement in the several localities designated by the wants of the Union Pacific Railway and the interest of the General Government in preserving the lines of the public surveys in proper shape for future operations in the district. The proposed extension of standard lines is with the view of preparing for the subsequent survey of lands already bordering on the settlements. The survey and establishment of the boundary line between Nebraska and Dakota has been proposed in view of the importance of defining, at an early day, the northern limit of the political jurisdiction of the State, and to provide for the extension of public surveys north of the eighth standard parallel, and west of the second guide meridian west, which must close upon this boundary line. The execution of these surveys will prepare the way for civil organization in the new and growing settlements of that locality, and prevent the trespass of such settlements upon the Sioux Indian reservation of Dakota Territory, the southern boundary of which is the line dividing Nebraska and Dakota.

The northern boundary of the State is in an unexplored region, where transportation will be difficult and costly, and I am of the opinion that \$30 per mile, the rate given in my estimate, will be but a moderate compensation for the execution of this important work.

## OFFICE-WORK.

The field-notes of 96 miles 51 chains and 85 links of standard, and 1,031 miles 23 chains and 61 links of exterior lines, have been examined, approved, and transcripts and diagrams made thereof (in duplicate) and transmitted to the Department.

The field-notes of 118 townships of subdivision lines have been examined, approved, and transcripts and township plats made thereof (in triplicate) and transmitted to the Department and the proper local land offices.

Descriptive lists of 124 townships have been made and transmitted to the proper local land offices.

Seventy-two volumes of field-notes of surveys, including the boundaries of Nebraska,

Wyoming, and Colorado, the Fort McPherson military reservation, the base line, standard and subdivision lines have been paced, indexed, and bound. In addition to this, there has been the usual amount of miscellaneous work performed, covering such a multitude and variety of subjects as to preclude any detailed statement thereof. The total office expenses during the year have been \$9,617 89.

#### NATURAL RESOURCES.

The State of Nebraska contains a total area of 48,636,000 acres, about one-half of which has been surveyed. The reliable and accurate knowledge of the country obtained by the extension of surveys and from the observations of military and other exploring parties exhibits the fact that the State contains much less than the usual average of barren or worthless lands.

With reference to resources and productions, the State comprises two natural divisions, nearly equal in area, which may properly be described as the eastern or agricultural, and western or grazing districts; the one adapted to agriculture, the other to stock-raising. The line of division between these districts approximates longitude 99° west from Greenwich, which is not far from Fort Kearney, although west of this line there is a large amount of fine agricultural lands, and perhaps some grazing lands east of it.

Eastern Nebraska is adapted to all the agricultural staples of this latitude. The award of the first premium for the best collection of fruits, to the State Horticultural Society of Nebraska, made at the recent exhibition of fruits at Richmond, Virginia, where all the States of the Union were represented, may be said to have disposed of any doubt concerning the successful production of fruit in this portion of the State.

Western Nebraska is peculiarly suited to stock-raising by the extent and quality of its natural pasturage, and the character of its climate. It comprises a portion of the State commonly known as "The Plains," long represented as a sterile waste, but found, upon investigation and by actual experiment, to be rich in the essential elements of material wealth and greatness.

The mild, dry weather of the winter months, and winter-grazing, are the two great features that distinguish this as a stock-raising region. They enable the stock-owner to dispense with the artificial shelter and food for his herds throughout the entire year.

The mean temperature for the whole year is 50° Fahrenheit; for spring it is 47°; summer, 75°; autumn, 50°; and winter, 25°. Observations taken at Fort Kearney since 1849 show that at that point the months of May and September are entirely exempt from frost. The annual rain-fall is 20 inches, of which 8 inches fall in the spring, 6 in summer, 4 in autumn, and 18 inches of snow, equal to 1½ inches of rain-fall in the winter. There is no rain during the cold months, and the slight snows are very dry. Observations covering a period of six years show an average of three hundred clear days in each year. The above statistics exhibit the character of the climate that renders stock-raising in this district, without shelter, practicable.

The real source of the future wealth of this country, however, must be in its winter-grazing, which furnishes winter-feed for stock, superior to the hay and grain of the Eastern States. This cheap stock-food is the product of plains grasses, grown and matured under conditions of climate given above. The plains grasses are fine and short, but very rich, and contain, in condensed form, as much nutriment as the larger species. They grow and mature during the rains of spring, and gradually dry up through late summer and early autumn. Retaining their rich juices, they become as perfectly cured as the best-made hay. The slight, dry snows scarcely ever remain longer than a few hours, and do not seem to injure the natural pasturage in the least. There are several herds already occupying this region, that number their cattle and sheep by thousands, all in a healthy and prosperous condition. In the light of these facts the future wealth of this country may be outlined. For many of the statistics given above I have to acknowledge myself indebted to Dr. H. Latham, a resident of the Plains and formerly surgeon of the Union Pacific Railway, who has furnished the public much valuable information concerning this region, in a pamphlet on the grazing resources of the trans-Missouri country, containing an array of facts, experiments, and observations, that are irresistible.

#### IMMIGRATION.

Immigration to Nebraska during the year 1871 has been unusually large, and the progress of the State in material developments correspondingly rapid. A careful estimate, based upon statistics obtained from the State superintendent of immigration, and from other reliable sources, places the total increase of population during the year, by immigration, at about 75,000. This large influx is, to a great extent, due to the systematic efforts of the State board of immigration, and the railway companies, in making known the superior inducements the State offers the settler, and for the profitable employment of capital and labor.

An interesting feature of this remarkable increase is the establishment of numerous colonies through the instrumentality of those railway companies owning lands in the State granted by the General Government, which they offer to sell in large quantities and on long credit. The magnitude and extent of these colonies' settlements may be inferred from the fact that the Burlington and Missouri River Railway Company has alone located, during the year, nine colonies, all reported in a prosperous condition, and that one of these colonies, located by the Union Pacific Railway, has negotiated with that company for lands sufficient to accommodate one thousand families.

## RAILWAYS.

This great increase of population means a proportionate increase of wealth and production, demanding additional means of transportation. This demand is being supplied by the extension of numerous lines of railways into the interior of the State. Three hundred miles have been completed and put in operation during the year by the following railway companies, viz: the Burlington and Missouri River, the Atchison and Nebraska, the Midland Pacific, the Omaha and Northwestern, and the Fremont, Elkhorn and Missouri Valley.

The Burlington and Missouri River Railway is an extension of the road of that name in Iowa, from Plattsmouth, on the Missouri River, to Fort Kearney, a distance of about two hundred miles, where it connects with the Union Pacific, and to which point it will be completed before the close of the present year. The average cost per mile of this road, when completed, including buildings, rolling-stock, and general equipment, as estimated by the superintendent, will be about \$40,000. The pay of conductors on this road is from \$60 to \$80 per month; brakemen, \$40 to \$50 per month; engineers, \$3 50 per day; firemen, \$1 50 to \$2 per day; machinists, \$2 75 to \$3 per day; and common labor, \$1 60 to \$2 per day. Passenger tariff is five cents per mile. The road being so new, the traffic, as yet, is light. The following extract from statement of the superintendent gives the totals of freight transported over the road during the eleven months ending June 30, 1871, to wit: Lumber, 5,376,000 feet; merchandise of all kinds, 9,675,000 pounds; grain of all kinds, 6,000,000 pounds; coal, 1,548 tons; cattle, 211 head; and hogs, 40 head.

The Atchison and Nebraska Railway is located in the valley of the Great Nemaha River, in the southeast portion of the State, with about forty-five miles completed within the State.

The Midland Pacific is located from Nebraska City to Lincoln, the State capital, with fifty-eight miles completed.

The Omaha and Northwestern runs from Omaha north, through Douglas and Washington Counties, with the Niobrara River as its ultimate terminus, and has about fifty miles completed.

The Fremont, Elkhorn and Missouri Valley starts from Fremont, on the Union Pacific, and runs up the Elkhorn River, with about fifty miles completed.

In addition to these railways which have extended their lines during the year, the great national thoroughfare, the Union Pacific, is prosecuting work on the railway bridge across the Missouri River at Omaha, with probability of its completion early in next year.

The Omaha and Southwestern Railway is completed to Platte River, a distance of about twenty-five miles, where it connects with the Burlington and Missouri River Railway.

The Brownville and Fort Kearney have completed the grade of twelve miles, and located seventy-five miles of road from Brownville west to Fort Kearney.

Thus it will be seen that the various portions of the State are fast being provided with the facilities of transportation, so necessary to the growth and improvement of the country. The pay of employés on the several railways is probably about the same as that of those on the Burlington and Missouri River, given above.

The amount of values added to the wealth of the State by the construction of these three hundred miles of railway, adopting the estimated cost per mile of the Burlington and Missouri River, is \$12,000,000. The increase of values in the entire State, by immigration, during the year, will swell this amount to about \$20,000,000. The total population of Nebraska, as shown by the census of 1870, was a little more than 122,000; the actual number was much greater, as the census was imperfectly taken. The total of values in the State at the beginning of the present year, as shown by the books of the State auditor, is \$55,512,658. These statements, partial and incomplete as they are, may, I trust, prove of interest in showing the rapid strides made by this new State during the brief period of one year.

The statements, estimates, map, &c., accompanying this report are:

A.—Schedule showing the condition of the public surveys under the appropriation for the fiscal year ending June 30, 1871.

B.—Schedule showing the condition of the public surveys under the appropriation for the fiscal year ending June 30, 1872.



C.—Statement showing the amount expended for salaries of surveyor general and clerks, and condition of account during the fiscal year ending June 30, 1871.

D.—Statement showing the amount expended for rent of office and incidental expenses and condition of account during the fiscal year ending June 30, 1871.

E.—Statement showing the description of land, area, and number of miles for which duplicate plats and transcripts of field-notes have been transmitted to the Department, and triplicate plats and descriptive lists have been furnished the local land offices, during the fiscal year ending June 30, 1871.

F.—Statement showing the description and number of township plats and descriptive lists furnished to the different local land offices during the fiscal year ending June 30, 1871.

G.—Estimate of sums required for the extension of public surveys in the State for the fiscal year ending June 30, 1873.

H.—Estimate of sums required for office expenses for the fiscal year ending June 30, 1873.

K.—Sectional map of Nebraska, exhibiting the progress and condition of the public surveys for the fiscal year ending June 30, 1871, upon which the surveys completed are shown in black; those under contract, in green; and those proposed, in red. Care has been taken to render the primary object of the map as clear as possible, and to avoid a multiplicity of lines. The boundaries of the five United States land districts have been given in a descriptive note.

Very respectfully, your obedient servant,

E. E. CUNNINGHAM,  
*Surveyor General.*

A.—Schedule showing the condition of the public surveys under the appropriation for the fiscal year ending June 30, 1871.

Names of contractors.	Number of contract.	Date of contract.	Amount and locality.	Character of work and number of miles.		Cost.	Date and amount of appropriation.	Present condition.
				Township.	Section.			
H. C. Fellows.....	31	Aug. 4, 1870	<i>All north of the base line and west of the sixth principal meridian in Nebraska.</i> Section lines of townships 15 and 16, ranges 49 to 55, inclusive; and township 16, range 56. { Exterior lines of townships 25 to 32, inclusive, ranges 9 and 10. Section lines of townships 25 to 32, inclusive; and township 32, ranges 9 and 10. { Exterior lines of townships 21 to 24, ranges 9 to 16, inclusive.	<i>M. ch. lk.</i>	<i>M. ch. lk.</i>	\$5,432 47	Appropriation by act of Congress app'd July 15, '70. U. P. R. R. special deposits. 3,600 00 Special appropriation for relief of William Hardin.	\$40,000 00 9,250 41 3,600 00
				166 66 03	905 32 87		\$6	
N. J. Paul and J. N. Paul.	32	Aug. 4, 1870	{ Section lines of townships 25 to 32, inclusive; and township 32, ranges 9 and 10. Section lines of townships 21 to 24, ranges 9 to 16, inclusive.		601 16 01	3,607 20		{ Survey completed, returned approved; plats and transcripts transmitted.
				312 40 71		2,187 56		{ Survey completed, returned approved; plats and transcripts transmitted.
John F. Burch and E. H. Warner.	33	Aug. 4, 1870	{ Section lines of townships 17 to 20, inclusive, ranges 15 and 16; and township 20, range 14. Section lines of townships 21, 22, and 23, range 7; section lines of townships 21 to 25, range 8; section lines of townships 21 to 24, ranges 9 and 10. { Exterior lines of townships 15 and 16, ranges 43 to 48, inclusive.		576 31 16	3,458 34		{ Survey completed, returned approved; plats and transcripts transmitted.
								{ Survey completed, returned approved; plats and transcripts transmitted.
John R. Livingston and J. Stewart Livingston.	34	Aug. 5, 1870	{ Section lines of township 14, ranges 41 to 46, inclusive; section lines of townships 15, ranges 41 to 44, inclusive. Section lines of townships 5 to 8, ranges 25 to 30, inclusive.		961 05 37	5,766 40		{ Survey completed, returned approved; plats and transcripts transmitted.
				96 18 70		673 64		{ Survey completed, returned approved; plats and transcripts transmitted.
James McBride and E. E. Murphy.	35	Aug. 5, 1870	{ Section lines of township 14, ranges 41 to 46, inclusive; section lines of townships 15, ranges 41 to 44, inclusive. Section lines of townships 5 to 8, ranges 25 to 30, inclusive.		851 15 25	5,107 14		{ Survey completed, returned approved; plats and transcripts transmitted.
								{ Survey completed, returned approved; plats and transcripts transmitted.
Philander C. Patterson.	36	Aug. 5, 1870		253 63 25		1,776 97		{ Survey completed, returned approved; plats and transcripts transmitted.

A.—Schedule showing the condition of the public surveys under the appropriation for the fiscal year ending June 30, 1871—Continued.

Names of contractors.	No. of contract.	Date of contract.	Amount and locality.	Character of work and number of miles.		Rate.	Cost.	Date and amount of appropriation.	Present condition.
				Township.	Section.				
			<i>All N. of base line and W. of 6th principal meridian in Neb.</i>	<i>M. ch. lk.</i>	<i>M. ch. lk.</i>				
Philander C. Patterson	36	Aug. 5, 1870	Section lines of townships 5 and 6, ranges 22 to 24, inclusive.	.....	359 77 99	\$6	\$2, 159 85	.....	Survey completed, returned approved; plats and transcripts transmitted.
Edward C. Smith	37	Aug. 5, 1870	Section lines of township 9, ranges 26 to 28, inclusive; section lines of township 10 and 11, ranges 29 to 30, inclusive.	.....	659 36 82	6	3, 956 76	.....	Survey completed, returned approved; plats and transcripts transmitted.
Charles Wimpf	38	Aug. 6, 1870	Section lines of townships 14 and 15, ranges 35 to 40, inclusive.	.....	782 74 11	6	4, 097 55	.....	Survey completed, returned approved; plats and transcripts transmitted.
Josiah B. Park	39	Aug. 6, 1870	(Exterior lines of towns p 15, ranges 27 to 32, inclusive; section lines of township 14, ranges 30 to 32, inclusive; section lines of towns p 15, ranges 27 to 32, inclusive.	65 77 92	.....	7	461 83	.....	Survey completed, returned approved; plats and transcripts transmitted.
William Hardin	40	Aug. 5, 1870	(Exterior lines of township 12, ranges 41 and 42.	9 26 60	.....	7	65 33	.....	Survey completed, returned approved; plats and transcripts transmitted.
			Section lines of township 12, ranges 33 to 42, inclusive.	.....	585 48 12	6	3, 506 88	.....	Survey completed, returned approved; plats and transcripts transmitted.
			(Exterior lines of townships 1 to 4, ranges 25 to 28, inclusive.	168 26 96	.....	7	1, 178 36	.....	Survey completed, returned approved; plats and transcripts transmitted.
William E. Daugherty.	41	Aug. 6, 1870	Section lines of township 3, ranges 20 to 24, inclusive; section lines of township 4, ranges 22 to 24, inclusive.	.....	590 40 40	6	3, 543 03	.....	Survey completed, returned approved; plats and transcripts transmitted.
Josiah B. Park, (special instructions.)	.....	Aug. 6, 1870	Extending the boundary of Fort McPherson Military Reservation.	.....	73 70 (*)		35 00	.....	Survey completed, returned approved; plats and transcripts transmitted.
			Balance of Union Pacific Railroad deposit.	.....	.....		548 37	.....	
			Balance of appropriation, benefit of William Hardin.	.....	.....		27 79	.....	
			Deficiency of appropriation fiscal year 1871.	.....	.....		.....	.....	
				1, 073 05 17	7, 464 20 78	.....	52, 895 91	52, 895 91	

\* Five dollars per day, seven days.



B.—Schedule showing the contracts and condition of the public surveys under the appropriation for this district for the fiscal year ending June 30, 1872.

No. of contract.	Names of contractors.	Date of contract.	Character of work.	Amount and locality.	Estimated cost.	Date and amount of appropriation.	Present condition.
42	Daugherty & Parnecce...	1871 May 20	Subdivisions....	<i>All north of the base-line and west of the sixth principal meridian.</i> Township 13, ranges 51 to 56; townships 13 to 16, ranges 57 and 58. Fractional townships 12, ranges 51 to 59; townships 13 to 16, ranges 57 to 59.	\$5, 900	Mar. 3, 1871, \$40, 000	Parties in the field advance returns of field-notes of fractional townships 12, ranges 51 and 52. Township 13, ranges 31, 52, and 53, have been examined approved; plats and transcripts transmitted.
43	William A. Daugherty ..	May 25	Subdivisions....	Townships 9, ranges 30, 31, and 32; townships 9, 10, and 11, ranges 33 and 34.	3, 000	.....	Survey completed in the field and advance returns of field-notes of township 9, ranges 29, 30, 31, and 32, have been received, examined, approved; plats and transcripts transmitted.
44	Daugherty and Cutler....	May 26	{ Exterior lines... { Subdivisions....	Townships 9, 10, and 11, range 41, inclusive; township 11, ranges 35 to 40, inclusive; township 11, range 41.	5, 900	.....	Survey completed and the field-notes returned to this office.
45	Wiltso and Kendall.....	June 15	{ Exterior lines... { Subdivisions....	Townships 25 to 28, ranges 11 to 13, inclusive. Townships 25 to 31, range 13; townships 29 and 30, range 14.	5, 900	.....	Field-notes of exterior lines have been returned, examined, approved. Diagrams and transcripts transmitted, subdivisions completed, and field-notes returned to this office.
46	Richards & Gay.....	June 15	{ Exterior lines... { Subdivisions....	Townships 29 to 33, ranges 11 to 13, inclusive, and townships 29 and 30, range 14. Townships 29 to 31, ranges 9 to 12, inclusive, and townships 32 and 33, ranges 11, 12, and 13.	5, 900	.....	Survey completed in the field, but not returned.
47	Park and Campbell.....	June 16	{ Exterior lines... { Subdivisions....	Township 16, between ranges 25 and 26, 26 and 27, 27 and 28, 28 and 29, 29 and 30, 30 and 31, 31 and 32. Township 16, ranges 25 to 32; township 16, ranges 35 to 42, inclusive.	5, 250	.....	Advance returns of townships 16, ranges 45 to 42, inclusive, received, examined, approved; plats and transcripts transmitted.

## B.—Schedule showing the contracts and condition of the public surveys under the appropriation, &amp;c.—Continued.

No. of contract.	Names of contractors.	Date of contract.	Character of work.	Amount and locality.	Estimated cost.	Date and amount of appropriation.	Present condition.
48	George W. Fairfield.....	1871 June 17	{ Exterior lines... Subdivisions...	All north of the base-line and west of the sixth principal meridian. Townships 1 to 4, inclusive, range 29..... Townships 1 to 4, inclusive, ranges 27 and 28. Townships 1 and 2, ranges 20 to 24, inclusive; townships 1 to 4, ranges 25 and 26.	{ \$2,750 5,500	..... .....	Survey executed, not returned. Survey completed and field-notes of 12 townships returned to this office.
49	Stevenson and Slocum...	June 16					
	Total.....				40,000	\$40,000	

E. E. CUNNINGHAM, Surveyor General.

SURVEYOR GENERAL'S OFFICE, Plattsmouth, September 25, 1871.

C.—Statement showing the amount expended for salaries of surveyor general and clerks, and condition of account during fiscal year ending June 30, 1871.

By appropriation for salaries of surveyor general and clerks:	
To first quarter ending September 30, 1871.....	\$1,506 25
To second quarter ending December 31, 1871.....	2,225 00
To third quarter ending March 31, 1871.....	2,225 00
To fourth quarter ending June 30, 1871, account of May 4, inclusive.....	1,665 11
To balance unexpended June 30, 1871.....	678 64
Total .....	<u>8,300 00</u>

E. E. CUNNINGHAM,  
Surveyor General.

SURVEYOR GENERAL'S OFFICE,  
Plattsmouth, Nebraska, September 25, 1871.

D.—Statement showing the amount expended for rent of office and incidental expenses and condition of account during fiscal year ending June 30, 1871.

By appropriation for rent of office and incidental expenses:	
To first quarter ending September 30, 1870.....	\$416 45
To second quarter ending December 31, 1870.....	540 60
To third quarter ending March 31, 1871.....	321 41
To fourth quarter ending June 30, 1871, account of May 4, inclusive.....	718 07
To balance unexpended June 30, 1871.....	3 47
Total .....	<u>2,000 00</u>

E. E. CUNNINGHAM,  
Surveyor General.

SURVEYOR GENERAL'S OFFICE,  
Plattsmouth, Nebraska, September, 25, 1871.



E.—Statement showing the description of lands, area, and number of miles, for which duplicate plats and transcripts of field-notes have been transmitted to the Department, and triplicate plats and descriptive lists have been furnished to the local land offices, during the fiscal year ending June 30, 1871.

Number of townships.	DESCRIP- TION.		Number of acres.	AMOUNT OF SUR- VEYS.			Number of townships.	DESCRIP- TION.		Number of acres.	AMOUNT OF SUR- VEYS.		
	Townships north.	Range west, of sixth principal meridian.		Miles.	Chains.	Links.		Townships north.	Range west, of sixth principal meridian.		Miles.	Chains.	Links.
1	15	49	23,050.95	59	79	49	61	15	45	23,942.37	59	70	7
2	15	50	23,055.20	59	77	72	62	15	46	22,993.14	59	77	26
3	15	51	23,060.44	59	79	88	63	15	47	22,956.29	59	72	42
4	15	52	23,051.61	60	-----	2	64	15	48	22,767.55	59	49	44
5	15	53	23,043.55	59	79	72	65	5	22	23,072.78	59	76	52
6	15	54	23,027.05	59	77	67	66	6	22	23,010.94	59	75	54
7	15	55	23,053.32	59	78	39	67	5	23	23,016.97	59	73	-----
8	16	49	23,046.93	60	12	58	68	6	23	23,120.75	60	3	27
9	16	50	23,042.41	60	24	64	69	5	24	23,148.12	60	10	62
10	16	51	23,044.58	60	37	14	70	6	24	23,080.94	59	79	4
11	16	52	23,044.95	60	50	36	71	9	26	23,070.31	60	2	56
12	16	53	23,049.93	60	61	50	72	9	27	23,037.61	59	79	65
13	16	54	23,038.01	60	72	20	73	9	28	23,060.17	60	8	57
14	16	55	23,019.27	61	1	96	74	10	29	23,075.38	60	5	51
15	16	56	23,055.33	61	19	60	75	11	29	22,988.02	59	74	75
16	25	9	23,013.46	59	78	41	76	10	30	23,025.85	59	79	49
17	26	9	22,994.50	59	75	56	77	11	30	23,020.00	60	-----	35
18	27	9	22,931.00	59	68	61	78	10	31	22,962.65	59	70	79
19	28	9	22,904.14	61	3	33	79	11	31	22,964.33	59	72	76
20	25	10	23,046.61	60	1	-----	80	10	32	22,868.88	59	61	39
21	26	10	22,922.14	59	79	28	81	11	32	22,855.52	59	61	-----
22	27	10	22,949.13	59	71	57	82	14	35	20,681.68	68	17	59
23	28	10	22,750.18	60	49	65	83	15	35	22,986.22	59	74	4
24	32	9	18,621.04	59	27	31	84	14	36	20,900.42	69	54	88
25	32	10	19,339.22	60	40	29	85	15	36	22,995.16	59	75	44
26	20	14	22,552.44	65	75	94	86	14	37	20,621.16	70	13	98
27	17	15	23,030.20	60	1	96	87	15	37	22,935.93	59	70	22
28	17	16	22,142.73	76	72	60	88	14	38	21,773.21	66	19	87
29	18	15	22,997.48	59	76	16	89	15	38	22,050.70	64	49	64
30	18	16	23,048.45	60	17	50	90	14	39	23,014.49	59	79	45
31	19	15	22,949.80	59	71	33	91	15	39	20,590.26	72	46	52
32	19	16	23,051.79	59	79	68	92	14	40	23,032.78	60	-----	66
33	20	15	22,402.00	73	36	98	93	15	40	21,112.63	71	51	82
34	20	16	22,956.40	59	79	1	94	14	30	21,147.72	70	51	22
35	21	7	23,003.14	59	76	51	95	14	31	20,263.56	80	31	33
36	22	7	22,966.68	59	73	2	96	14	32	19,205.70	78	42	22
37	23	7	22,935.83	59	66	94	97	15	27	23,020.01	59	79	72
38	21	9	23,023.10	59	76	29	98	15	28	23,008.62	59	78	92
39	22	9	23,012.41	59	73	52	99	15	29	23,029.68	60	-----	42
40	23	9	22,937.03	59	67	19	100	15	30	23,071.52	60	4	75
41	24	9	22,867.83	61	60	-----	101	15	31	23,062.44	60	33	96
42	21	10	23,015.61	59	77	11	102	15	32	22,996.98	59	76	44
43	22	10	23,017.08	59	76	44	103	12	33	22,702.51	60	7	28
44	23	10	23,016.68	59	76	44	104	12	34	23,558.92	61	53	-----
45	24	10	23,063.19	61	1	77	105	12	35	23,172.78	60	28	21
46	21	8	22,922.04	59	68	15	106	12	36	23,127.27	60	38	19
47	22	8	22,925.90	59	68	-----	107	12	37	23,262.23	60	65	3
48	23	8	22,850.65	59	58	10	108	12	38	23,199.87	60	65	14
49	24	8	22,750.58	60	36	14	109	12	39	23,091.69	60	52	81
50	25	8	22,943.63	59	69	15	110	12	40	23,138.93	60	63	89
51	14	41	22,980.87	59	74	2	111	12	41	23,045.49	60	63	72
52	14	42	22,895.74	59	63	89	112	12	42	10,850.94	32	32	58
53	14	43	23,031.37	59	79	34	113	3	20	22,532.41	84	29	57
54	14	44	22,982.98	59	71	46	114	3	21	22,526.15	83	60	57
55	14	45	23,021.14	59	75	77	115	3	22	22,998.33	62	18	9
56	14	46	22,984.56	59	71	98	116	3	23	22,960.35	59	75	11
57	15	41	20,829.54	70	18	20	117	3	24	23,068.46	60	1	90
58	15	42	22,368.43	62	36	41	118	4	22	22,687.07	78	28	36
59	15	43	22,961.49	59	68	93	119	4	23	22,519.11	83	8	94
60	15	44	22,967.83	59	66	6	120	4	24	22,671.70	78	57	86

E. E. CUNNINGHAM, Surveyor General.

SURVEYOR GENERAL'S OFFICE, Plattsmouth, September 25, 1871.

F.—Statement showing the description and number of township plats and descriptive lists furnished to the different land offices during the fiscal year ending June 30, 1871.

Township and range.	When trans- mitted.	No. of plats.	No. of descrip- tive lists.
TO REGISTER DAKOTA LAND DISTRICT.			
Townships 24 and 25 north and ranges 8, 9, and 10 west; townships 26, 27, 23, and 32 north and ranges 9 and 10 west.	March 22, 1871	14	23
TO REGISTER OMAHA LAND DISTRICT.			
Townships 21 to 24 north and ranges 7 to 10, inclusive, west .....	March 24, 1871	12	24
TO REGISTER GRAND ISLAND LAND DISTRICT.			
Township 12 north and range 42 west; township 13 north and range 28 west; township 14 north and ranges 30 to 32 and 35 to 46, inclusive, west; township 15 north and ranges 27 to 32 and 35 to 55, inclusive, west; township 16 north and ranges 49 to 56 west; townships 17, 18, and 19 north and ranges 15 to 16 west; township 20 north and ranges 14 to 16 west; township 13 north and range 23 west.	March 18, 1871	61	120
TO REGISTER SOUTH PLATTE LAND DISTRICT.			
Township 9 north and ranges 26, 27, and 28 west; townships 10 and 11 north and ranges 29 to 32, inclusive, west; township 12 north and ranges 33 to 42, inclusive, west; township 14 north and ranges 31 and 32 west.	March 21, 1871	23	46
TO REGISTER NEMAHA LAND DISTRICT.			
Township 3 north and ranges 20 to 24, inclusive, west; townships 4, 5, and 6 north and ranges 22 to 24, inclusive, west.	March 3, 1871	14	23
RECAPITULATION.			
To Nemaha land district .....		14	23
To South Platte land district .....		23	46
To Grand Island land district .....		61	120
To Omaha land district .....		12	24
To Dakota land district .....		14	23
Total .....		124	246

E. E. CUNNINGHAM,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,  
Plattsmouth, Nebraska, September 25, 1871.

G.—Estimate of sums required for the extension of public surveys in the State of Nebraska for the fiscal year ending June 30, 1873.

#### STATE BOUNDARY.

North boundary of State, being the 43d parallel of north latitude, from the 27th parallel of longitude west of Washington east to its intersection with the Keka Poha, 213 miles, at \$30 per mile ..... \$6,390

#### STANDARD LINES.

(All north of base line and west of 6th principal meridian.)

The 5th standard parallel, from the 2d guide meridian to west boundary of the State, 294 miles, at \$12 per mile ..... 3,528  
The 6th, 7th, and 8th standard parallel, from the 2d to 3d guide meridian, 144 miles, at \$12 per mile ..... 1,728  
The 3d guide meridian, from 5th standard parallel to north boundary, 84 miles, at \$12 per mile ..... 1,008  
The 4th, 5th, 6th, and 7th guide meridian, from 5th to 6th standard parallel, 96 miles, at \$12 per mile ..... 1,152

## EXTERIOR LINES.

*(All north of base line and west of 6th principal meridian.)*

Townships 25 to 28, inclusive, ranges 14 to 16, inclusive, 102 miles, at \$8 per mile .....	\$816
Townships 31 to 33, inclusive, range 14, 24 miles, at \$8 per mile .....	192
Townships 29 to 33, ranges 15 and 16, 66 miles, at \$8 per mile .....	528
Townships 15 and 16, ranges 17 to 24, inclusive, 132 miles, at \$8 per mile .....	1,056
Townships 1 to 4, inclusive, ranges 30 to 42, inclusive, 468 miles, at \$8 per mile .....	3,744
Townships 5 to 8, inclusive, ranges 31 and 32, 84 miles, at \$8 per mile .....	672

## SUBDIVISION LINES.

*(All north of base line and west of 6th principal meridian.)*

Townships 21 to 24, inclusive, ranges 11 to 16, inclusive, 1,440 miles, at \$7 per mile .....	10,080
Townships 25 to 28, inclusive, ranges 14 to 16, inclusive, 720 miles, at \$7 per mile .....	5,040
Townships 31 to 33, inclusive, range 14, 180 miles, at \$7 per mile .....	1,260
Townships 29 to 33, inclusive, ranges 15 and 16, 600 miles, at \$7 per mile .....	4,200
Townships 14 to 16, inclusive, ranges 17 to 24, inclusive, 1,440 miles, at \$7 per mile .....	10,080
Townships 5 to 8, inclusive, ranges 25 to 32, inclusive, 1,920 miles, at \$7 per mile .....	13,440
Townships 1 to 4, inclusive, ranges 29 to 42, inclusive, 3,180 miles, at \$7 per mile .....	22,260
Township 16, ranges 43 to 48, 360 miles, at \$7 per mile .....	2,520
Total .....	89,694

## RECAPITULATION.

North boundary of State, 213 miles, at \$30 per mile .....	\$6,390
Standard lines, 618 miles, at \$12 per mile .....	7,416
Exterior lines, 876 miles, at \$8 per mile .....	7,008
Subdivision lines, 9,840 miles, at \$7 per mile .....	68,880
Total .....	89,694

E. E. CUNNINGHAM,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,  
*Plattsmouth, Nebraska, September 25, 1871.*

H.—*Estimate of sums required for office expenses for fiscal year ending June 30, 1873.*

Salary of surveyor general .....	\$2,000
Salary of chief clerk .....	1,600
Salary of principal draughtsman .....	1,300
Salary of assistant draughtsman .....	1,300
Salary of accountant .....	1,200
Salary of three copyists, at \$1,100 each .....	3,300
Office-rent, fuel, messenger, stationery, binding, &c .....	3,000
Total .....	13,700

E. E. CUNNINGHAM,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE,  
*Plattsmouth, Nebraska, September 25, 1871.*



*F.—Report of the surveyor general of Kansas.*

SURVEYOR GENERAL'S OFFICE,  
Lawrence, Kansas, September 16, 1871.

SIR: In accordance with your instructions dated April 7, 1871, I herewith submit, in duplicate, my annual report of the surveying operations, accompanied by a map, showing the progress of surveys in this district during the fiscal year ending June 30, 1871.

## CONDITION OF FIELD-WORK.

The surveys contracted for out of the appropriation approved July 15, 1870, have been completed during the fiscal year. The fourth standard parallel south, between the third and fourth guide meridians west, which was not established by Paul, Paul and Leecompt, deputy surveyors, under their joint contract, dated August 18, 1868, has now been correctly surveyed, and the proper monuments erected according to the printed surveying instructions. Ranges 25, 26, and 27 of the aforesaid parallel were surveyed, under special instructions, by Edwin Burwell, deputy surveyor, in the months of November and December, 1870, and the expenses charged against the appropriation for surveys of public lands in Kansas, as directed by the Commissioner of the General Land Office, November 14, 1870. The remainder of the parallel was established in the month of May, 1871, by James N. Paul, deputy surveyor, in accordance with Department instructions of November 14, 1870.

Four contracts were entered into for surveying the Osage diminished reservation. Notwithstanding the severe winter, the deputies completed the work within the specified time, and transmitted field-notes and plats in accordance with their contract. These contracts were entered into at greatly reduced rates, and payable out of the proceeds of the sales of the lands; but during the last session of Congress \$75,000 were appropriated for surveying the Osage diminished reservation. This sum, however, has been insufficient to pay the entire expense of surveying, platting, and transcribing of field-notes, and \$435 64 are now due Angell and Angell, deputy surveyors.

In accordance with your instructions of April 28, 1871, I have entered into contract with William B. Covell, deputy surveyor, for the surveying of the "Cherokee strip." The deputy will enter upon his duties as soon as the south boundary of the State (now under contract) is surveyed from the Neosho River to the Arkansas River.

Out of the appropriation of March 3, 1871, for surveying the public lands in Kansas, I have entered into three joint contracts for the better protection of the surveyors from hostile bands of Indians. Under these contracts the lines of survey are extended over the public domain where actual settlements most require it, lying along the Arkansas River and tributaries. The deputies are all in the field, and, if not molested by Indians, will complete their work before the 1st of December, 1871.

No surveys have been executed during the fiscal year ending June 30, 1871, which are payable out of special deposits.

## OFFICE-WORK.

During the fiscal year ending June 30, 1871, the field-notes of three hundred and eighty-three miles of standard, eight hundred and ninety-four miles of exterior townships, and six thousand two hundred and eight miles of subdivisional lines have been transcribed and transmitted to the Department.

Thirty-four diagrams in duplicate of standard and exterior lines, and plats in triplicate of 105 townships, were prepared, and the required copies transmitted to the General Land Office and the proper local land offices.

The Topeka land office has been furnished with copies of 315 plats and 315 descriptive lists, to replace those destroyed by fire.

One hundred and five descriptive lists of the surveys executed during the year ending June 30, 1871, have been prepared and forwarded to the respective local land offices.

The plats and field-notes of the entire survey of the Osage diminished reservation, as transmitted to this office by the deputy surveyors, have been examined and the areas recalculated, and the required copies transmitted to the Department and the respective local land offices.

An unusually large amount of miscellaneous business has been attended to in this office during the year, of which it is difficult to enter into detailed statements.

## EXTENSION OF PUBLIC SURVEYS.

My estimates for the surveying service in this district, for the fiscal year ending June 30, 1873, were prepared in compliance with your instructions of April 7, 1871, and transmitted July 15, 1871.

The country over which the lines of public surveys are proposed to be extended, lies north of and along the Arkansas River, and in the northwest and extreme western

portion of the State. These parts of the public domain in Kansas are rapidly settling up. The land is of a very good quality and sufficiently watered and timbered.

Of the railroads now in progress and projected there are two that pass through this unsurveyed country. The Atchison, Topeka and Santa Fé Railroad is being built along the north side of the Arkansas River to the western boundary of the State, and thence in a southwest direction to Santa Fé. The Kansas Central, a narrow-gauge railroad, is to be built from Leavenworth westward to the Solomon River, and thence along the North Fork of said river to Denver, to connect with the Denver and Rio Grande Railroad, (also a road of a three-foot gauge.)

As it is of great importance and much interest to the pioneer settler and the public generally to have the lines of survey extended over these unsurveyed lands, I urge the necessity of providing at the next session of Congress for an appropriation to meet the exigencies in this case.

I respectfully call your attention to the necessity of having the boundary line between Kansas and Colorado surveyed and established, in order to close out the surveys of the lands granted to the Kansas Pacific Railway.

In conclusion, your attention is invited to the accompanying tabular statements, which form a part of this report, viz:

A.—Names, duties and salaries of persons employed in the surveyor general's office during the year ending June 30, 1871.

B.—Sums expended for salaries of surveyor general and clerks during the year ending June 30, 1871.

C.—Expenditures of the office during the fiscal year ending June 30, 1871.

D.—The extent and cost of surveys executed during the year ending June 30, 1871.

E.—The extent and cost of surveying the Osage diminished reservation.

F.—Amounts deposited by railroad companies in compliance with an act, approved July 2, 1864, and the decision of the Secretary of the Interior of November 8, 1866.

G.—Numbers and area of townships, plats, and transcript of field-notes which have been transmitted to the Department, and plats and descriptive lists furnished the local land offices at Salina and Augusta, during the fiscal year ending June 30, 1871.

H.—Numbers and area of townships of the Osage diminished reservation, of which plats and transcript of field-notes have been transmitted to the Department, and plats transmitted to the local land offices at Humboldt and Augusta.

I.—Estimated expense, number of miles and character of work for which contracts have been entered into, and chargeable to the appropriation of March 3, 1871.

J.—Estimate of sums required for the extension of surveys during the fiscal year ending June 30, 1873.

K.—Estimate of sums required for office expenses for the fiscal year ending June 30, 1873.

I am, sir, very respectfully, your obedient servant,

C. W. BABCOCK,  
*Surveyor General.*

HON. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*

A.—Statement showing the names, duties, nativity, whence appointed, and rate of compensation per annum of persons employed in the surveyor general's office of Kansas, during the fiscal year ending June 30, 1871.

Names.	Duty.	Nativity.	Whence appointed.	Term of service.	Salary per annum.	Remarks.
C. W. Babcock.....	Surveyor general.....	Vermont.....	Kansas.....	Entire year.....	\$2,000 00	Employed as extra draughtsman upon the Topeka records from July 1 to December 31, 1870.
H. C. F. Hackbusch.....	Chief clerk.....	Prussia.....	do.....	do.....	1,000 00	
William B. Corvel.....	Principal draughtsman.....	New York.....	do.....	do.....	1,300 00	
Francis L. Hildebrand.....	Assistant draughtsman.....	Prussia.....	do.....	do.....	1,200 00	
Elisha Diefendorf.....	do.....do.....	New York.....	do.....	From July 1 to 31, 1870.....	1,100 00	Employed as extra draughtsman upon the Topeka records from July 1 to December 31, 1870.
J. R. Riddle.....	do.....do.....	.....	do.....	From November 7, 1870, to January 31, 1871.....	1,100 00	Employed as extra draughtsman upon the Topeka records from November 7, 1870, to January 31, 1871.
Austin R. Mills.....	Accountant.....	Massachusetts.....	do.....	Entire year.....	1,200 00	Employed as extra clerk upon the Topeka records.
John Barber.....	Copyist.....	Ohio.....	do.....	do.....	1,100 00	
Thomas Guest.....	do.....do.....	.....	do.....	From September 1, 1870, to June 30, 1871.....	1,100 00	Employed as extra clerk upon the Topeka records from September 1, 1870, to December 31, 1870.
Richard E. Tucker.....	do.....do.....	.....	do.....	From November 7 to December 31, 1870.....	1,100 00	
Henry B. Ray.....	do.....do.....	Virginia.....	do.....	From January 1 to March 31, 1871.....	1,100 00	
S. A. Gillette.....	do.....do.....	.....	do.....	From January 1 to June 30, 1871.....	1,100 00	
James Bicknell.....	Messenger.....	England.....	do.....	Entire year.....	.....	



B.—Statement showing the amount expended for salary of surveyor general and clerks during the fiscal year ending June 30, 1871.

	Regular service.	Extra service.	Total.
Quarter ending September 30, 1870 .....	\$1,525 00	\$757 33	\$2,282 33
Quarter ending December 31, 1870 .....	1,689 40	1,014 40	2,703 80
Quarter ending March 31, 1871 .....	2,650 00	369 72	3,019 72
Quarter ending June 30, 1871 .....	2,375 00	275 00	2,650 00
Total .....	8,239 40	2,416 45	10,655 85

C.—Statement showing the amount expended for rent of office and incidental expenses during the fiscal year ending June 30, 1871.

Quarter ending September 30, 1870 .....	\$394 00
Quarter ending December 31, 1870 .....	577 40
Quarter ending March 31, 1871 .....	483 35
Quarter ending June 30, 1871 .....	510 15
Total .....	<u>1,964 90</u>

RECAPITULATION.

Salaries of surveyor general and clerks during the year .....	\$10,655 85
Rent of office and incidental expenses during the year .....	<u>1,964 90</u>
Total .....	<u>12,620 75</u>

D.—Statement showing the extent and cost of surveys executed in Kansas during the fiscal year ending June 30, 1871, payable out of appropriation for public surveys approved July 15, 1870.

Number of contract.	Names of deputies.	Standard lines.	Township lines.	Section lines.	Date of appropriation.	Date of contract.	Rate per mile.	Amount for mileage.	Total of contract.
350	Wilcox and Ulong.....	Miles. chs. lks. 83 22 98	Miles. chs. lks. 85 34 68	Miles. chs. lks. 1, 719 66 38	July 15, 1870	Aug. 22, 1870	\$10 00	\$832 86	\$9,944 59
350	Wilcox and Ulong.....				July 15, 1870	Aug. 22, 1870	6 00	512 50	
350	Wilcox and Ulong.....				July 15, 1870	Aug. 22, 1870	5 00	8,599 14	
351	Armstrong, Burwell, and Urton.....	288 66 88			July 15, 1870	Aug. 23, 1870	10 00	2,818 36	15,662 99
351	Armstrong, Burwell, and Urton.....		405 46 96		July 15, 1870	Aug. 23, 1870	6 00	2,433 62	
351	Armstrong, Burwell, and Urton.....			2,082 17 91	July 15, 1870	Aug. 23, 1870	5 00	10,411 11	
352	McClure, Cosgray, and Armstrong.....		403 14 32		July 15, 1870	Aug. 23, 1870	6 00	2,419 07	14,450 00
352	McClure, Cosgray, and Armstrong.....			2,406 14 99	July 15, 1870	Aug. 23, 1870	5 00	12,030 93	
Special instructions..	Armstrong, Burwell, and Urton.....	17 72 57			July 15, 1870	Nov. 2, 1870	10 00	179 07	
Total.....		390 02 43	894 11 96	6,208 19 28				40,236 65	40,236 65

E.—Statement showing the extent and cost of surveying the Osage diminished reservation in Kansas, payable out of appropriation approved March 3, 1871.

No. of contract.	Names of deputies.	Standard lines and out-boundaries.	Township lines.	Section lines.	Date of appropriation.	Date of contract.	Rate per mile.	Amount for mileage.	Transcribing field-notes and preparing diagrams and plats.	Total of contract.
353	Diefendorf and Mitchell.....	Miles. chs. lks. 157 25 58	Miles. chs. lks. 483 54 89		Mar. 3, 1871	Oct. 7, 1870	\$8 00	\$1,258 55	\$37 00	\$16,431 00
353	Diefendorf and Mitchell.....				Mar. 3, 1871	Oct. 7, 1870	5 00	2,418 43		
353	Diefendorf and Mitchell.....		2,693 23 54		Mar. 3, 1871	Oct. 7, 1870	4 35	11,715 82		
354	Angell and Angell.....	179 48 48			Mar. 3, 1871	Oct. 7, 1870	8 00	1,436 84	191 20	22,009 77
354	Angell and Angell.....		628 21 01		Mar. 3, 1871	Oct. 7, 1870	5 00	3,141 31		
354	Angell and Angell.....			3,679 71 49	Mar. 3, 1871	Oct. 7, 1870	4 35	16,007 52		
355	Robert Armstrong.....	344 45 23			Mar. 3, 1871	Oct. 28, 1870	8 00	2,756 52	856 80	15,795 32
355	Robert Armstrong.....		1,017 38 22		Mar. 3, 1871	Oct. 28, 1870	5 00	5,087 39		
355	Robert Armstrong.....			1,630 75 62	Mar. 3, 1871	Oct. 28, 1870	4 35	7,694 61		
356	McClure and Armstrong.....		4,548 24 78		Mar. 3, 1871	Dec. 9, 1870	4 35	19,785 15	1,414 40	21,199 55
Total.....		681 39 29	2,129 34 12	12,552 35 43				70,702 11		
								4,733 50		75,435 64

F.—Statement showing the amount deposited by the Kansas Pacific Railway and the Central Branch Union Pacific Railroad Companies, in compliance with an act approved July 2, 1864, and the decision of the Secretary of the Interior of November 8, 1866.

Name of company.	Date of deposit.	For surveys.	For office work.	Total amt deposited.
Kansas Pacific Railway.....	Nov. 9, 1870	\$1,924 53	\$200 00	\$2,124 53
Central Branch Union Pacific Railroad.....	Nov. 23, 1870	543 37	60 00	603 37
Kansas Pacific Railway.....	Nov. 29, 1870	1,286 65	160 00	1,446 65
Central Branch Union Pacific Railroad.....	Dec. 24, 1870	451 97	60 00	511 97
Central Branch Union Pacific Railroad.....	Jan. 13, 1871	1,313 04	190 00	1,433 04
Total.....		5,519 56	600 00	6,119 56

G.—Statement showing the description of lands and area of same for which duplicate plats and transcript of field-notes have been transmitted to the Department, and triplicate plats and descriptive lists have been furnished the local land office, during the fiscal year ending June 30, 1871.

## AT SALINA, KANSAS.

Township south.	Range west.	Area.	Plats and field-notes, when transmitted.	Descriptive lists when transmitted.	Township south.	Range west.	Area.	Plats and field-notes, when transmitted.	Descriptive lists, when transmitted.
16	25	22,558.74	Jan. 16, 1871	Mar. 16, 1871	10	37	23,008.04	Dec. 19, 1870	Mar. 16, 1871
17	25	22,563.51	Jan. 16, 1871	Mar. 16, 1871	11	37	22,664.26	Jan. 16, 1871	Mar. 16, 1871
18	25	22,618.16	Jan. 16, 1871	Mar. 16, 1871	12	37	22,993.61	Jan. 16, 1871	Mar. 16, 1871
19	25	22,621.07	Jan. 16, 1871	Mar. 16, 1871	13	37	22,415.50	Jan. 16, 1871	Mar. 16, 1871
20	25	22,613.02	Jan. 16, 1871	Mar. 16, 1871	14	37	23,056.31	Jan. 16, 1871	Mar. 16, 1871
16	26	23,009.22	Jan. 16, 1871	Mar. 16, 1871	15	37	23,048.92	Jan. 16, 1871	Mar. 16, 1871
17	26	22,981.33	Jan. 16, 1871	Mar. 16, 1871	6	38	22,802.99	Dec. 19, 1870	Mar. 16, 1871
18	26	23,001.42	Jan. 16, 1871	Mar. 16, 1871	7	38	22,908.38	Dec. 19, 1870	Mar. 16, 1871
19	26	23,072.20	Jan. 16, 1871	Mar. 16, 1871	8	38	22,911.18	Dec. 19, 1870	Mar. 16, 1871
20	26	23,088.75	Jan. 16, 1871	Mar. 16, 1871	9	38	22,944.00	Dec. 19, 1870	Mar. 16, 1871
6	33	22,867.03	Dec. 19, 1870	Mar. 16, 1871	10	38	22,983.85	Dec. 19, 1870	Mar. 16, 1871
7	33	22,977.00	Dec. 19, 1870	Mar. 16, 1871	11	38	22,739.86	Jan. 16, 1871	Mar. 16, 1871
8	33	22,968.73	Dec. 19, 1870	Mar. 16, 1871	12	38	22,951.42	Jan. 16, 1871	Mar. 16, 1871
9	33	23,031.71	Dec. 19, 1870	Mar. 16, 1871	13	38	15,334.24	Jan. 16, 1871	Mar. 16, 1871
10	33	23,077.55	Dec. 19, 1870	Mar. 16, 1871	14	38	23,030.51	Jan. 16, 1871	Mar. 16, 1871
6	34	22,758.33	Dec. 19, 1870	Mar. 16, 1871	15	38	23,050.20	Jan. 16, 1871	Mar. 16, 1871
7	34	22,917.26	Dec. 19, 1870	Mar. 16, 1871	6	39	22,869.09	Dec. 19, 1870	Mar. 16, 1871
8	34	22,936.76	Dec. 19, 1870	Mar. 16, 1871	7	39	22,895.84	Dec. 16, 1870	Mar. 16, 1871
9	34	22,970.63	Dec. 19, 1870	Mar. 16, 1871	8	39	22,951.20	Dec. 19, 1870	Mar. 16, 1871
10	34	23,028.14	Dec. 19, 1870	Mar. 16, 1871	9	39	22,983.84	Dec. 19, 1870	Mar. 16, 1871
6	35	22,679.66	Dec. 19, 1870	Mar. 16, 1871	10	39	23,021.08	Dec. 19, 1870	Mar. 16, 1871
7	35	22,903.44	Dec. 19, 1870	Mar. 16, 1871	11	39	22,830.23	Jan. 16, 1871	Mar. 16, 1871
8	35	22,907.27	Dec. 19, 1870	Mar. 16, 1871	12	39	22,949.51	Jan. 16, 1871	Mar. 16, 1871
9	35	22,957.96	Dec. 19, 1870	Mar. 16, 1871	13	39	22,333.51	Jan. 16, 1871	Mar. 16, 1871
10	35	23,011.90	Dec. 19, 1870	Mar. 16, 1871	14	39	23,054.56	Jan. 16, 1871	Mar. 16, 1871
6	36	22,663.80	Dec. 19, 1870	Mar. 16, 1871	15	39	23,056.91	Jan. 16, 1871	Mar. 16, 1871
7	36	22,935.31	Dec. 19, 1870	Mar. 16, 1871	6	40	22,756.49	Dec. 19, 1870	Mar. 16, 1871
8	36	22,990.76	Dec. 19, 1870	Mar. 16, 1871	7	40	22,820.18	Dec. 19, 1870	Mar. 16, 1871
9	36	23,034.24	Dec. 19, 1870	Mar. 16, 1871	8	40	22,923.27	Dec. 19, 1870	Mar. 16, 1871
10	36	23,044.80	Dec. 19, 1870	Mar. 16, 1871	9	40	22,915.98	Dec. 19, 1870	Mar. 16, 1871
11	36	22,632.70	Jan. 16, 1871	Mar. 16, 1871	10	40	23,026.52	Dec. 19, 1870	Mar. 16, 1871
12	36	22,924.49	Jan. 16, 1871	Mar. 16, 1871	11	40	22,939.46	Jan. 16, 1871	Mar. 16, 1871
13	36	22,927.70	Jan. 16, 1871	Mar. 16, 1871	12	40	23,008.16	Jan. 16, 1871	Mar. 16, 1871
14	36	22,949.63	Jan. 16, 1871	Mar. 16, 1871	13	40	22,965.77	Jan. 16, 1871	Mar. 16, 1871
15	36	23,004.14	Jan. 16, 1871	Mar. 16, 1871	14	40	22,915.78	Jan. 16, 1871	Mar. 16, 1871
6	37	22,755.14	Dec. 19, 1870	Mar. 16, 1871	15	40	22,911.28	Jan. 16, 1871	Mar. 16, 1871
7	37	22,947.95	Dec. 19, 1870	Mar. 16, 1871					
8	37	22,941.25	Dec. 19, 1870	Mar. 16, 1871					
9	37	23,002.80	Dec. 19, 1870	Mar. 16, 1871			1,709,837.66		



G.—Statement showing the description of lands and area of same for which duplicate plats and transcript of field-notes have been transmitted, &c.—Continued.

## AT AUGUSTA, KANSAS.

Township south.	Range west.	Area.	Plats and field-notes, when transmitted.	Descriptive lists, when transmitted.	Township south.	Range west.	Area.	Plats and field-notes, when transmitted.	Descriptive lists, when transmitted.
26	1	14,807.54	June 28, 1871	Aug. 19, 1871	23	7	22,997.98	Feb. 15, 1871	Mar. 16, 1871
26	2	15,887.12	June 28, 1871	Aug. 19, 1871	24	7	22,999.90	Feb. 15, 1871	Mar. 16, 1871
26	3	16,257.74	June 28, 1871	Aug. 19, 1871	25	7	23,028.74	Feb. 15, 1871	Mar. 16, 1871
25	4	22,939.25	Feb. 15, 1871	Mar. 16, 1871	26	7	16,554.62	June 28, 1871	Aug. 19, 1871
26	4	16,224.65	June 28, 1871	Aug. 19, 1871	21	8	22,237.95	Feb. 15, 1871	Mar. 16, 1871
24	5	22,457.79	Feb. 15, 1871	Mar. 16, 1871	22	8	22,151.02	Feb. 15, 1871	Mar. 16, 1871
25	5	23,055.14	Feb. 15, 1871	Mar. 16, 1871	23	8	22,914.64	Feb. 15, 1871	Mar. 16, 1871
26	5	16,402.32	June 28, 1871	Aug. 19, 1871	24	8	22,962.11	Feb. 15, 1871	Mar. 16, 1871
21	6	22,860.25	Feb. 15, 1871	Mar. 16, 1871	25	8	23,032.34	Feb. 15, 1871	Mar. 16, 1871
22	6	22,932.55	Feb. 15, 1871	Mar. 16, 1871	26	8	16,633.92	June 28, 1871	Aug. 19, 1871
23	6	21,733.96	Feb. 15, 1871	Mar. 16, 1871	22	9	22,976.96	Feb. 15, 1871	Mar. 16, 1871
24	6	22,966.67	Feb. 15, 1871	Mar. 16, 1871	23	9	23,036.08	Feb. 15, 1871	Mar. 16, 1871
25	6	23,005.14	Feb. 15, 1871	Mar. 16, 1871	24	9	23,057.92	Feb. 15, 1871	Mar. 16, 1871
26	6	16,383.10	June 28, 1871	Aug. 19, 1871	25	9	23,105.29	Feb. 15, 1871	Mar. 16, 1871
21	7	22,780.82	Feb. 15, 1871	Mar. 16, 1871					
22	7	21,556.84	Feb. 15, 1871	Mar. 16, 1871			629,934.35		

H.—Statement showing description of lands and area of same, of the Osage diminished reservation, for which approved plats and transcript of field-notes have been forwarded to the Department, and approved plats have been transmitted to the local land office.

## AT HUMBOLDT, KANSAS.

Township.	Range.	Area.	Plats and field-notes, when transmitted.	Township.	Range.	Area.	Plats and field-notes, when transmitted.
<i>South.</i>	<i>East.</i>			<i>South.</i>	<i>East.</i>		
30	9	21,800.51	June 16, 1871	33	13	23,087.79	June 16, 1871
31	9	22,819.16	June 16, 1871	34	13	23,087.66	June 16, 1871
32	9	22,779.11	June 16, 1871	35	13	1,195.96	June 16, 1871
33	9	22,973.51	June 16, 1871	30	14	22,112.29	June 16, 1871
34	9	23,038.90	June 16, 1871	31	14	22,989.57	June 16, 1871
35	9	1,122.76	June 16, 1871	32	14	22,923.62	June 16, 1871
30	10	21,735.59	June 16, 1871	33	14	22,986.01	June 16, 1871
31	10	22,961.54	June 16, 1871	34	14	23,043.39	June 16, 1871
32	10	23,024.18	June 16, 1871	35	14	1,165.92	June 16, 1871
33	10	23,014.28	June 16, 1871	30	15	22,179.86	June 16, 1871
34	10	23,067.47	June 16, 1871	31	15	22,944.83	June 16, 1871
35	10	1,118.20	June 16, 1871	32	15	23,036.23	June 16, 1871
30	11	21,733.40	June 16, 1871	33	15	23,012.40	June 16, 1871
31	11	23,041.63	June 16, 1871	34	15	23,080.06	June 16, 1871
32	11	23,084.02	June 16, 1871	35	15	1,137.68	June 16, 1871
33	11	23,088.32	June 16, 1871	30	16	22,299.25	June 16, 1871
34	11	23,007.81	June 16, 1871	31	16	22,990.75	June 16, 1871
35	11	1,247.39	June 16, 1871	32	16	23,015.45	June 16, 1871
30	12	21,687.65	June 16, 1871	33	16	23,053.91	June 16, 1871
31	12	22,865.22	June 16, 1871	34	16	23,041.29	June 16, 1871
32	12	22,834.98	June 16, 1871	35	16	1,085.60	June 16, 1871
33	12	22,986.58	June 16, 1871	30	17	4,984.28	June 16, 1871
34	12	23,023.98	June 16, 1871	31	17	6,191.70	June 16, 1871
35	12	1,230.00	June 16, 1871	32	17	6,240.47	June 16, 1871
30	13	21,776.10	June 16, 1871	33	17	6,310.58	June 16, 1871
31	13	23,040.12	June 16, 1871	34	17	6,379.50	June 16, 1871
32	13	23,053.86	June 16, 1871	35	17	250.53	June 16, 1871

## AUGUSTA, KANSAS.

<i>South.</i>	<i>East.</i>			<i>South.</i>	<i>West.</i>		
30	1	22,096.03	July 7, 1871	31	1	22,976.15	July 7, 1871
31	1	22,958.55	July 7, 1871	32	3	22,641.37	July 7, 1871
33	1	22,982.01	July 7, 1871	33	3	21,999.21	July 7, 1871
34	1	23,024.63	July 7, 1871	34	3	22,043.49	July 7, 1871
35	1	23,025.30	July 7, 1871	35	3	1,091.94	July 7, 1871
30	2	1,052.07	July 7, 1871	30	4	22,646.82	July 7, 1871
31	2	21,265.77	July 7, 1871	31	4	22,981.77	July 7, 1871
32	2	22,324.03	July 7, 1871	32	4	22,995.03	July 7, 1871
33	2	22,525.65	July 7, 1871	33	4	22,943.61	July 7, 1871
34	2	22,768.70	July 7, 1871	34	4	22,785.88	July 7, 1871
35	2	23,021.86	July 7, 1871	35	4	1,037.03	July 7, 1871
30	3	1,139.86	July 7, 1871	30	5	22,543.67	July 10, 1871
		22,514.38	July 7, 1871	31	5	22,916.37	July 10, 1871

## H.—Statement showing description of lands and area of same, of the Osage diminished reservation, &amp;c.—Continued.

AUGUSTA, KANSAS—Continued.

Town-ship.	Range.	Area.	Plats and field-notes, when transmitted.	Town-ship.	Range.	Area.	Plats and field-notes, when transmitted.
<i>South.</i>	<i>East.</i>			<i>South.</i>	<i>East.</i>		
32	5	22, 937. 95	July 10, 1871	32	10	23, 040. 77	July 13, 1871
33	5	23, 004. 78	July 10, 1871	33	10	23, 122. 44	July 13, 1871
34	5	23, 061. 27	July 10, 1871	34	10	23, 133. 15	July 13, 1871
35	5	1, 133. 94	July 10, 1871	35	10	274. 82	July 13, 1871
30	6	22, 557. 09	July 10, 1871	30	11	22, 820. 73	July 14, 1871
31	6	22, 987. 40	July 10, 1871	31	11	22, 929. 08	July 14, 1871
32	6	22, 986. 45	July 10, 1871	32	11	22, 966. 87	July 14, 1871
33	6	22, 997. 60	July 10, 1871	33	11	23, 002. 12	July 14, 1871
34	6	23, 022. 64	July 10, 1871	34	11	23, 023. 28	July 14, 1871
35	6	1, 111. 14	July 10, 1871	35	11	345. 20	July 14, 1871
30	7	22, 439. 01	July 10, 1871	30	12	22, 823. 48	July 14, 1871
31	7	22, 929. 16	July 10, 1871	31	12	22, 952. 72	July 14, 1871
32	7	22, 951. 66	July 10, 1871	32	12	22, 962. 43	July 14, 1871
33	7	22, 944. 56	July 10, 1871	33	12	22, 975. 22	July 14, 1871
34	7	22, 913. 65	July 10, 1871	34	12	22, 948. 47	July 14, 1871
35	7	1, 277. 62	July 10, 1871	35	12	454. 32	July 14, 1871
30	8	27, 234. 36	July 10, 1871	30	13	22, 833. 58	July 14, 1871
31	8	29, 199. 82	July 10, 1871	31	13	22, 932. 02	July 14, 1871
32	8	29, 128. 10	June 16, 1871	32	13	22, 971. 39	July 14, 1871
33	8	29, 170. 31	June 16, 1871	33	13	23, 010. 51	July 14, 1871
34	8	29, 184. 64	June 16, 1871	34	13	22, 997. 84	July 14, 1871
35	8	1, 540. 54	June 16, 1871	35	13	487. 43	July 14, 1871
	<i>West.</i>			30	14	22, 803. 05	July 14, 1871
30	1	22, 845. 72	July 12, 1871	31	14	22, 965. 23	July 14, 1871
31	1	22, 981. 01	July 12, 1871	32	14	22, 983. 13	July 14, 1871
32	1	23, 108. 82	July 12, 1871	33	14	22, 955. 92	July 14, 1871
33	1	23, 077. 87	July 12, 1871	34	14	22, 996. 52	July 14, 1871
34	1	23, 033. 82	July 12, 1871	35	14	443. 62	July 14, 1871
35	1	916. 74	July 12, 1871	30	15	22, 767. 76	July 14, 1871
30	2	22, 809. 89	July 12, 1871	31	15	22, 974. 17	July 14, 1871
31	2	23, 020. 34	July 12, 1871	32	15	23, 030. 30	July 14, 1871
32	2	22, 960. 79	July 12, 1871	33	15	22, 952. 92	July 14, 1871
33	2	22, 965. 20	July 12, 1871	34	15	22, 972. 26	July 14, 1871
34	2	23, 025. 97	July 12, 1871	35	15	323. 57	July 14, 1871
35	2	693. 96	July 12, 1871	30	16	22, 847. 39	July 14, 1871
30	3	22, 833. 37	July 12, 1871	31	16	22, 938. 65	July 14, 1871
31	3	22, 986. 06	July 12, 1871	32	16	22, 936. 71	July 14, 1871
32	3	22, 987. 71	July 12, 1871	33	16	23, 040. 64	July 14, 1871
33	3	23, 001. 97	July 12, 1871	34	16	23, 008. 44	July 14, 1871
34	3	23, 007. 97	July 12, 1871	35	16	299. 67	July 14, 1871
35	3	455. 55	July 12, 1871	30	17	22, 775. 51	July 14, 1871
30	4	22, 861. 55	July 12, 1871	31	17	22, 903. 20	July 14, 1871
31	4	23, 006. 43	July 12, 1871	32	17	22, 947. 98	July 14, 1871
32	4	23, 082. 23	July 12, 1871	33	17	22, 980. 47	July 14, 1871
33	4	23, 030. 15	July 12, 1871	34	17	23, 001. 03	July 14, 1871
34	4	23, 003. 15	July 12, 1871	35	17	294. 99	July 14, 1871
35	4	255. 62	July 12, 1871	30	18	22, 682. 43	July 14, 1871
30	5	22, 856. 75	July 13, 1871	31	18	22, 907. 57	July 14, 1871
31	5	22, 957. 20	July 13, 1871	32	18	22, 941. 36	July 14, 1871
32	5	23, 034. 18	July 13, 1871	33	18	22, 962. 36	July 14, 1871
33	5	23, 045. 01	July 13, 1871	34	18	23, 023. 26	July 14, 1871
34	5	23, 032. 36	July 13, 1871	35	18	234. 98	July 14, 1871
35	5	197. 01	July 13, 1871	30	19	22, 755. 47	July 14, 1871
30	6	22, 818. 63	July 13, 1871	31	17	22, 892. 76	July 14, 1871
31	6	22, 948. 23	July 13, 1871	32	19	22, 942. 95	July 14, 1871
32	6	22, 992. 72	July 13, 1871	33	19	22, 979. 86	July 14, 1871
33	6	23, 079. 59	July 13, 1871	34	19	23, 014. 08	July 14, 1871
34	6	23, 055. 96	July 13, 1871	35	19	191. 80	July 14, 1871
35	6	128. 93	July 13, 1871	30	20	22, 796. 56	July 14, 1871
30	7	22, 818. 79	July 13, 1871	31	20	22, 904. 28	July 14, 1871
31	7	22, 919. 29	July 13, 1871	32	20	22, 885. 60	July 14, 1871
32	7	22, 978. 34	July 13, 1871	33	20	22, 958. 71	July 14, 1871
33	7	23, 050. 90	July 13, 1871	34	20	22, 990. 02	July 14, 1871
34	7	23, 044. 00	July 13, 1871	35	20	214. 12	July 14, 1871
35	7	87. 41	July 13, 1871	30	21	22, 815. 66	July 14, 1871
30	8	22, 819. 91	July 13, 1871	31	21	22, 912. 31	July 14, 1871
31	8	23, 007. 25	July 13, 1871	32	21	22, 878. 45	July 14, 1871
32	8	23, 049. 79	July 13, 1871	33	21	22, 942. 62	July 14, 1871
33	8	23, 024. 02	July 13, 1871	34	21	23, 019. 21	July 14, 1871
34	8	23, 059. 14	July 13, 1871	35	21	235. 41	July 14, 1871
35	8	139. 41	July 13, 1871	30	22	22, 804. 35	July 14, 1871
30	9	22, 828. 92	July 13, 1871	31	22	22, 928. 85	July 14, 1871
31	9	22, 929. 93	July 13, 1871	32	22	22, 912. 86	July 14, 1871
32	9	22, 977. 01	July 13, 1871	33	22	22, 922. 45	July 14, 1871
33	9	23, 029. 54	July 13, 1871	34	22	23, 007. 70	July 14, 1871
34	9	23, 006. 59	July 13, 1871	35	22	239. 81	July 14, 1871

## H.—Statement showing description of lands and area of same, of the Osage diminished reservation, &amp;c.—Continued.

AUGUSTA, KANSAS—Continued.

Town-ship.	Range.	Area.	Plats and field-notes, when transmitted.	Town-ship.	Range.	Area.	Plats and field-notes, when transmitted.
<i>South.</i>	<i>East.</i>			<i>South.</i>	<i>East.</i>		
35	9	244.44	July 13, 1871	30	23	22,853.37	July 14, 1871
30	10	22,824.57	July 13, 1871	31	23	22,976.36	July 14, 1871
31	10	22,924.98	July 13, 1871	32	23	23,051.99	July 14, 1871
33	23	23,085.78	July 14, 1871	33	25	23,664.15	July 14, 1871
34	23	23,105.92	July 14, 1871	34	25	23,117.71	July 14, 1871
35	23	226.75	July 14, 1871	35	25	219.43	July 14, 1871
30	24	22,874.78	July 14, 1871	30	26	405.39	July 14, 1871
31	24	22,998.53	July 14, 1871	31	26	3,725.23	July 14, 1871
32	24	23,103.76	July 14, 1871	32	26	3,766.00	July 14, 1871
33	24	23,147.44	July 14, 1871	33	26	3,802.36	July 14, 1871
34	24	23,150.83	July 14, 1871	34	26	3,821.08	July 14, 1871
35	24	215.11	July 14, 1871	35	26	36.31	July 14, 1871
30	25	22,876.81	July 14, 1871				
31	25	22,978.65	July 14, 1871				
32	25	23,036.56	July 14, 1871			3,842,727 98	

## I.—Statement showing the estimated expense, number of miles, and character of work for which contracts have been entered into for surveying in Kansas, and chargeable to appropriation for such survey, approved March 3, 1871.

Number of contract.	Name of deputy.	Standard lines.	Township lines.	Section lines.	Rate per mile.	Estimated cost.
		<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>		
358	Wilcox & Thomas.....		243		\$6	\$1,458
	Do .....			1,700	5	8,500
359	Armstrong, Barwell & Urton .....	83			10	830
	Do .....		570		6	3,420
	Do .....			2,250	5	11,250
360	McClure, Casgray & Armstrong.....		162		6	972
	Do .....			2,700	5	13,500
	Total .....	83	975	6,650	.....	39,930

## J.—Estimate of sums required for the extension of surveys in the State of Kansas for the fiscal year ending June 30, 1873.

Surveys estimated.	Miles.	Rate.	Cost.
The 4th and 5th guide meridians, from the 4th to 5th standard parallel south	60	\$10	\$600
The 1st, 2d, 3d, and 4th standard parallels south, from the 5th guide meridian to the west boundary of the State, and the 5th standard parallel south, from the 3d guide meridian to the west boundary of the State; in all.	162	10	1,620
The exterior lines of townships 1, 2, 3, 4, and 5 south, of range 25 to 40 west, inclusive; the exterior lines of townships 16, 17, 18, 19, and 20 south, of ranges 33 to 40 west, inclusive; the exterior lines of townships 21, 22, 23, 24, and 25 south, of ranges 25 to 40 west, inclusive; also the exterior lines of townships lying between the base line and 5th standard parallel south, and the 5th guide meridian west and the west boundary of Kansas.....	2,500	6	15,000
The sub-divisional lines in all the aforesaid townships; in all.....	15,300	5	76,500
Total .....			93,720

## K.—Estimate of sums required for officers' expenses for the fiscal year ending June 30, 1873.

Salary of surveyor general.....	\$2,000
Salary of chief clerk.....	1,600
Salary of principal draughtsman.....	1,300
Salary of assistant draughtsman.....	1,200
Salary of accountant.....	1,200
Salary of two copyists, at \$1.100 each.....	2,200
Messenger, rent, and other incidental expenses.....	2,000
Total .....	11,500



*G.—Report of the surveyor general of New Mexico.*

SURVEYOR GENERAL'S OFFICE,  
Santa Fé, New Mexico, September 19, 1871.

SIR: In compliance with your letter of instructions of the 7th of April last, I have the honor to submit my report of the transactions of this office for the year ending June 30, 1871.

## PUBLIC SURVEYS.

Surveys have been executed under contracts with Robert B. Willison, dated August 30 and December 23, 1870, amounting to nearly eight hundred and sixty-one miles, including the subdivision of seven townships. These surveys were all in the southwestern portion of the Territory, in the region of Ralston, and upon the Gila River.

During the season preceeding, rich and extensive deposits of silver having been discovered in the Pyramid Mountains, a large number of prospectors and miners had gathered at Ralston, and were clamorous for a survey both of the mineral districts and the nearest agricultural land, some twenty-five miles distant upon the Gila. Here the needed water and water-power for the reduction of ores, it was anticipated, would speedily build up a large mining town. The difficulties to be overcome, the discovery of what are believed to be much richer mines, with wood and water at hand, has nearly depopulated Ralston, and built up a thriving mining town some one hundred miles east—Silver City.

This region, together with that about the Magdalena mines west of Fort Craig, are urgently calling for surveys. Along the lines of projected railroads there is a like demand.

Upon the various streams and water-courses settlement is constantly extending, as the fear of the Indian diminishes and population increases. From almost every portion of the Territory there come up to this office applications for surveys. A more liberal appropriation, considering the wants of the Territory and its large population, would seem to be the part of wisdom and justice.

## MINERAL SURVEYS.

During the year but one mineral claim has been surveyed—that of the San Agustin mine, in Doña Ana County.

## PRIVATE LAND GRANTS.

The subject of private land grants is daily assuming more and more importance. The increase in the value of lands consequent upon the nearer approach of numerous railroads, the sale of one grant to a foreign company at large figures, and the subsequent sale of a number of others at prices far beyond all previous experience, the sale by Government of numerous tracts, and the issuance of patents for the same upon lands now claimed under old grants, but never registered, has all tended to arouse the attention of holders of grants. More of these have been registered in this office during the past than during the ten years previous; and since 1861 not a single one had been adjudicated by the surveyor general until within the last twelve months. A number of these grants, recently registered or already on file in the office, have lately been called up for adjudication by the parties interested, and five of them have been acted upon, which, together with such others as may in the mean time be decided, will be transmitted in time for the action of the next Congress. Of the whole number now on file in the office, but fifty-five have been called up for action. A much larger number, it is believed, remain to be filed. In no case has any spurious or forged claim come under observation, so far as is known.

None of the grants in the Gadsden purchase, nor indeed on the Lower Rio Grande, in this Territory, have yet come up for adjudication, though the holders in that section, by their attorneys, are urgently requesting that the surveyor general repair to that region, and there take the necessary testimony in their cases, alleging that such action on his part would be in accordance with the original intention of Congress in establishing the office, citing, in evidence thereof, the first section of the law creating this office, and the instructions under it of the Secretary of the Interior of August 21, 1854, wherein the surveyor is required to hold his first session at Santa Fé, and his "subsequent sessions at such places and periods as public convenience may suggest, of which you will give timely notice to the Department," and stating further, in the cases of small claimants as well as in those of community grants, the inability of their clients to bear the expense necessary in bringing attorneys and witnesses hundreds of miles to this office, this in many cases being altogether impossible, owing to the age and infirmity of witnesses. And they further argue, that to exact this is a clear violation of the eighth article of the treaty of Guadalupe Hidalgo, (United States Statutes, vol. IX, page 929,) which says:

"Mexicans now established in territories previously belonging to Mexico, and which remain for the future within the limits of the United States, as defined by the present treaty, shall be free to continue where they now reside, or to remove at any time to the Mexican Republic, retaining the property which they possess in the said territories, or disposing thereof and removing the proceeds wherever they please, without their being subjected on this account to any contribution, tax, or charge whatever."

In order to fulfill the instructions from your office to examine carefully for frauds in grants, especially in the Mesilla Valley, as this office cannot compel or pay for the attendance of witnesses, there seems no other method than to visit that section and there make the necessary investigations.

The records necessary to a full understanding of the cases, in many instances, are said to be found only in the State of Chihuahua, either at El Paso or the capital of the State, a portion of whose territory went to make up the Gadsden purchase. Authority to visit these places, take testimony, examine the records, and obtain such transcripts therefrom as may throw light upon those cases, would seem advisable.

The repeated recommendation of the appointment of a commission to take charge of the investigation of the various grants remaining unheeded, the large and increasing amount of labor imposed upon this office calls for a more liberal provision for clerical assistance.

Another recommendation deemed of much importance, to wit, *that some time be prescribed by law within which all claims to be good shall be filed*, still awaits consideration, and its neglect embarrasses the prosecution of surveys, retards the settlement of the country, and begets daily conflicts between the hardy pioneer and the claimants.

Within the fiscal year but one survey of private land claims, that of José Leandro Perea, has been made; and but two have been made since the cost of survey has been imposed by law upon the claimants, one other, that of Pablo Montoya, being now in progress, and the applications for three others now pending, those of the Baca heirs' location, No. 1, of the Ojo del Espíritu Santo, and of the Bosque del Apache. It is believed the repeal of this law would be wise as well as just. Its repeal would be followed by numerous applications for survey, demanding a corresponding appropriation of funds. Indeed, the segregation of these claims from the public domain is a matter of the first importance in the prosecution of the public surveys. In the supposition that Congress will, at its next session, repeal the law just referred to, and in view of the probable demand, on the part of owners, for the survey of their claims, and of the manifest interest of the Government in having it done, I have estimated for an appropriation for that purpose of fifteen thousand dollars for the ensuing fiscal year.

#### AGRICULTURAL.

Agriculture, particularly in regions where irrigation is chiefly relied upon for moisture, promises in this Territory its usual rewards. Indeed, the products per acre upon the bottom-lands of the Rio Grande, where judiciously cultivated, are almost beyond belief to one accustomed to depend wholly upon rains for the necessary amount of water.

The large advance in the price obtained for this year's crop of wool is likely to stimulate this leading branch of agricultural wealth in New Mexico. For an account of the experiment of crossing the native with Cotswold sheep, I beg leave to refer to the letter of Colonel P. R. Skinner, herewith, marked H.

The grape crop of the Rio Grande Valley is this year unusually abundant. Yearly new vineyards are coming into bearing, counting their vines by the thousands, while the production of wine is annually becoming more and more an article of commerce and profit.

Between Bernalillo, on the north, and El Paso, on the south, the traveler may find—and that often in great perfection—both the light white and red wines of the Rhine and Bordeaux, and, as he goes south, the heavier Burgundy, port, sherry, and, with age, even a good Madeira. With a grape acclimated by two hundred years of cultivation, unexcelled for richness and lusciousness of flavor, always free from blight and disease of every kind, so destructive to European vineyards, so fatal to wine-growing on the Atlantic slope, and often so damaging even to California, with a soil as rich as that of the Nile, with abundance of water for irrigation, with sunny days and dewless nights, increasing in strength as the summer heats increase, the wines of the Rio Grande promise to become as varied and as excellent as those of France and Spain.

#### RAILROADS.

Railroads are approaching the Territory from various directions, already giving an impetus to the value of real estate, raising numerous inquiries in regard to land. Once they have penetrated the Territory, a large immigration may be looked for, with a rapid development of the rich mineral deposits and its abundant agricultural resources.

An early survey, embracing at least those lands lying along the contemplated routes

of railroads as well as the mining districts, together with the agricultural lands in their immediate vicinity likely to be required for their use and support, would seem the part of wisdom.

#### MINES AND MINING.

Steady progress has been made in the development of the Moreno mines, to which a great impulse has been given by the transfer of the Maxwell estate from private hands to what is understood to be a wealthy company of English capitalists. Increased shipments of gold are reported as the products of both the quartz mines and the placers.

The New Mexico Mining Company's operations are still suspended, awaiting completion of negotiations for its sale to another foreign company, with capital to develop its varied resources of gold, iron, and coal.

In the newer mining districts—such as Ralston, Silver City, and Corona del Pueblo—but few practical results are to be recorded, though Silver City, by its rude Mexican processes, has extracted many thousands of ounces of silver. For a more extensive account of these mining regions, I beg leave to refer you to the very intelligible report of Francis Sturenburg, esq., metallurgist, herewith, marked G.

I should, perhaps, mention, as an enterprise pregnant with interest, the sinking of an artesian well, with a view to procure water for the purpose of washing gold from the rich placer mines some thirty miles south of Santa Fé. Already the company have bored some 300 feet, obtaining considerable water even at a depth of 120 feet, but at 300 feet insufficient for profitable use. The company have now suspended their operations. Success in the enterprise would be a result of great and extensive benefit not only in the locality of the well but also to the whole Territory, as demonstrating the practicability of artesian wells in this region.

#### ACCOMPANYING DOCUMENTS.

The documents accompanying this report are the following:

- A.—Statement of public surveys executed during the year.
- B.—Statement of townships subdivided during the year.
- C.—General account of deposits for private grant and mineral surveys.
- D.—General salary account for fiscal year 1870-'71.
- E.—General contingent account for fiscal year 1870-'71.
- F.—Estimates for appropriations for fiscal year 1872-'73.
- G.—Mr. Sturenburg's report on certain mining districts.
- H.—Colonel Skinner's report of experiment in sheep-raising.

Very respectfully, your obedient servant,

T. RUSH SPENCER,  
*Surveyor General.*

HON. WILLIS DRUMMOND,  
*Commissioner of the General Land Office.*



A.—Statement of public surveys made in the district of New Mexico during the year ending June 30, 1871.

Contract.		Surveyor.	Character of work.	Township.	Range.	Surveyed.	Rate.	Cost.
No.	Date.							
38	Aug. 30, 1870	R. B. Willison	Fourth standard parallel south.....	.....	15, 16, 17, 18, 19, and 20 west.....	<i>M. ch. 75.</i>		
38	Aug. 30, 1870	do	First guide meridian west.....	.....	9 and 10 west.....	36 00 00	\$15 00	\$540 00
38	Aug. 30, 1870	do	Fifth standard parallel south.....	.....	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20, west.....	36 00 00	15 00	450 00
38	Aug. 30, 1870	do	Exteriors.....	.....	16 and 17, 17 and 18, 18 and 19, 19 and 20, and 20 and 21 west.....	66 00 00	15 00	990 00
38	Aug. 30, 1870	do	.....do.....	.....	21, 22, 23, 24, and 25 south.....	150 14 88	12 00	1,802 23
38	Aug. 30, 1870	do	.....do.....	.....	21 and 22, 22 and 23, 23 and 24, and 24 and 25 south.....	96 03 56	12 00	1,152 53
38	Aug. 30, 1870	do	Connections with standard parallel corners.....	.....	18 and 19 west.....	2 14 32	10 00	21 79
39	Dec. 23, 1870	do	Exteriors.....	.....	19 west.....	60 02 90	12 00	720 43
39	Dec. 23, 1870	do	Subdivisional.....	.....	19 south.....	60 05 22		
39	Dec. 23, 1870	do	.....do.....	.....	20 west.....	60 09 16		
39	Dec. 23, 1870	do	.....do.....	.....	18 west.....	60 01 48		
39	Dec. 23, 1870	do	.....do.....	.....	19 west.....	57 72 14	10 00	4,203 76
39	Dec. 23, 1870	do	.....do.....	.....	18 west.....	60 04 43		
39	Dec. 23, 1870	do	.....do.....	.....	19 west.....	60 08 02		
39	Dec. 23, 1870	do	.....do.....	.....	24 south.....	60 09 61		
Total during year.....						860 65 72	-----	9,880 74

T. RUSH SPENCER, *Surveyor General.*

SURVEYOR GENERAL'S OFFICE, Santa Fe, New Mexico, September 19, 1871.

B.—List of townships surveyed in the district of New Mexico since June 30, 1869, when last reported, to June 30, 1871.

Whole number subdivided.	Township.	Range.	Public land.	Private claims.	Reservations.	Total.	Remarks.
148.....	5 north.....	24 east.....	<i>Acre.</i> 2,935,140.11	<i>Acre.</i> 80,955.83	<i>Acre.</i> 8,840.00	<i>Acre.</i> 3,024,835.94	Totals at the end of the year ending June 30, 1869.
149.....	do.....	23 east.....	23,029.04	.....	.....	23,029.04	Under contract with R. B. Willison of Dec. 10, 1869.
150.....	6 north.....	do.....	23,017.63	.....	.....	23,017.63	Do.
151.....	do.....	do.....	23,027.22	.....	.....	23,027.02	Do.
152.....	7 north.....	do.....	23,915.20	.....	.....	23,915.20	Do.
153.....	8 north.....	do.....	23,173.06	.....	.....	23,173.06	Do.
154.....	6 north.....	22 east.....	23,120.75	.....	.....	23,120.75	Do.
155.....	do.....	20 east.....	22,956.08	.....	.....	22,956.08	Do.
156.....	5 north.....	21 east.....	23,165.61	.....	.....	23,165.61	Do.
157.....	7 north.....	do.....	23,024.48	.....	.....	23,024.48	Under contract with R. B. Willison of June 23, 1869.
158.....	do.....	22 east.....	23,117.05	.....	.....	23,117.05	Do.
159.....	8 north.....	21 east.....	23,193.80	.....	.....	23,193.80	Do.
160.....	do.....	22 east.....	23,220.83	.....	.....	23,220.83	Do.
161.....	9 north.....	21 east.....	23,075.44	.....	.....	23,074.44	Under contract with R. B. Willison of Dec. 23, 1870.
162.....	19 south.....	19 west.....	23,080.34	.....	.....	23,080.34	Do.
163.....	do.....	20 west.....	23,039.16	.....	.....	23,039.16	Do.
164.....	22 south.....	18 west.....	22,950.59	.....	.....	22,950.59	Do.
165.....	do.....	19 west.....	23,072.46	.....	.....	23,072.46	Do.
166.....	23 south.....	18 west.....	23,074.99	.....	.....	23,074.99	Do.
167.....	do.....	19 west.....	23,085.96	.....	.....	23,085.96	Do.
.....	24 south.....	do.....	.....	17,712.00	.....	17,712.00	Under contract with W. W. Griffin of March 10, 1871.
Total.....	.....	.....	3,306,543.42	98,607.83	8,840.00	3,504,051.25	

SURVEYOR GENERAL'S OFFICE, Santa Fé, New Mexico, September 19, 1871.

T. RUSH SPENCER, Surveyor General.

## C.—Private land and mineral claim survey deposits in account with the United States.

Cr.

Dr.

Sept. 17, 1866	For cost of field-work—Carey's deposit .....	\$703 91	Aug. 9, 1866	By Asa B. Carey, for survey of San Pedro and Cañon del Agua private land-claims—field-work.	\$936 00
Sept. 18, 1866	For amount refunded in excess of field-work—Carey's deposit.	222 09	Aug. 9, 1866	By same, for same—office-work .....	200 00
Jan. 5, 1867	For cost of office-work—Carey's deposit .....	197 35	May 31, 1869	By Lucien B. Maxwell, for survey of the Beaubien and Miranda private land-claim—field-work.	5,000 00
Jan. 24, 1867	For amount refunded in excess of office-work—Carey's deposit.	2 65	May 31, 1869	By same, for same—office-work .....	500 00
Aug. 8, 1869	For cost of field-work—Rosenthal's deposit .....	30 00	June 18, 1869	By William Rosenthal, for survey of Santa Rita del Cobre mineral claim—notice.	15 00
Aug. 24, 1869	For cost of notice—Rosenthal's deposit .....	15 00	June 18, 1869	By same, for same—field-work .....	30 00
Aug. 25, 1869	For cost of office-work—Rosenthal's deposit .....	53 10	June 18, 1869	By same, for same—office-work .....	55 00
Aug. 25, 1869	For amount refunded in excess of office-work—Rosenthal's deposit.	1 90	July 7, 1870	By Warren F. Shedd, for survey of the San Agustin mineral claim—field-work.	50 00
Mar. 12, 1870	For amount refunded in excess of field-work—Maxwell's deposit.	5,000 00	July 7, 1870	By same, for same—office-work .....	100 00
Mar. 12, 1870	For amount refunded in excess of office-work—Maxwell's deposit.	500 00	Jan. 12, 1871	By José L. Perea, for survey of the José L. Perea private land-claim—field-work.	375 00
July 28, 1870	For cost of field-work—Shedd's deposit .....	50 00	Jan. 12, 1871	By same, for same—office-work .....	75 00
July 28, 1870	For cost of office-work—Shedd's deposit .....	72 92	June 29, 1871	By John S. Watts, for survey of Pablo Montoya private land-claim—field-work.	1,560 00
July 28, 1870	For amount refunded in excess of office-work—Shedd's deposit.	27 08	June 29, 1871	By same, for same—office-work .....	150 00
Balance June 30, 1871 .....					
					1,650 00
					8,986 00

SURVEYOR GENERAL'S OFFICE,  
Santa Fe, New Mexico, September 19, 1871.T. RUSH SPENCER,  
Surveyor General.



D. *Statement of expenditures in the office of the surveyor general of New Mexico, for salaries, during the fiscal year ending June 30, 1871.*

Fiscal quarter.	Name.	Position.	Salary.	Time.		Amount.
				From, inclusive.	To, inclusive.	
First ....	T. Rush Spencer...	Surveyor general .....	\$3,000	July 1	Sept. 31	\$750 00
	Robert B. Willisen...	Draughtsman .....	1,500	July 27	Aug. 4	36 63
	David J. Miller....	Chief clerk and translator....	2,000	July 1	Sept. 30	500 00
Second...	William White....	Draughtsman .....	1,500	Aug. 29	Sept. 30	134 51
	T. Rush Spencer...	Surveyor general .....	3,000	Oct. 1	Dec. 31	750 00
	David J. Miller....	Chief clerk and translator....	2,000	Oct. 1	Dec. 31	500 00
Third....	William White....	Draughtsman .....	1,500	Oct. 1	Dec. 31	375 00
	T. Rush Spencer...	Surveyor general .....	3,000	Jan. 1	Mar. 31	750 00
	David J. Miller....	Chief clerk and translator....	2,000	Jan. 1	Mar. 31	500 00
Fourth ..	William White....	Draughtsman .....	1,500	Jan. 1	Mar. 31	375 00
	T. Rush Spencer...	Surveyor general .....	3,000	April 1	June 30	750 00
	David J. Miller....	Chief clerk and translator....	2,000	April 1	June 30	500 00
Total..	William White....	Draughtsman .....	1,500	April 1	June 30	375 00
						6,296 19

T. RUSH SPENCER,  
Surveyor General.

SURVEYOR GENERAL'S OFFICE, *Santa Fé, New Mexico, September 19, 1871.*

E.—*Statement of incidental expenditures in the office of the surveyor general of New Mexico during the fiscal year ending June 30, 1871.*

Fiscal quarter.	Name.	Consideration.	Time.		Amount.	Remarks.
			From, inclusive.	To, inclusive.		
First ....	T. Rush Spencer..	Sundries .....			\$191 40	Per vouchers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
First ....	Luis Gold .....	Office-rent.	July 1 ..	Sept. 30 ..	100 00	
Second ..	T. Rush Spencer..	Sundries .....			199 98	Per vouchers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
Second...	Luis Gold .....	Office-rent.	Oct. 1 ..	Dec. 31 ..	100 00	
Third ....	T. Rush Spencer..	Sundries .....			203 05	Per vouchers 1, 2, 3, 4, 5, 6, 7, 8, 9.
Third ....	Luis Gold .....	Office-rent.	Jan. 1 ..	Mar. 31 ..	100 00	
Fourth...	T. Rush Spencer..	Sundries .....			205 25	Per vouchers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
Fourth...	Luis Gold .....	Office-rent.	April 1 ..	June 30 ..	100 00	
Total..					1,199 68	

T. RUSH SPENCER,  
Surveyor General.

SURVEYOR GENERAL'S OFFICE, *Santa Fé, New Mexico, September 19, 1871.*

F.—*Estimates of the surveyor general of appropriations required for the surveying service in New Mexico, for the fiscal year ending June 30, 1873.*

Object of appropriation.	Amount.
ON SALARY ACCOUNT.	
For salary of surveyor general .....	\$3,000
For salary of chief clerk .....	2,000
For salary of translator and interpreter .....	2,000
For salary of computer of surveys .....	1,800
For salary of two draughtsmen, \$1,800 each .....	3,600
For salary of two clerks, \$1,750 each .....	3,500
	\$15,900
ON CONTINGENT ACCOUNT.	
For rent of office, stationery, fuel, messenger, &c. ....	2,000
ON SURVEYING ACCOUNT.	
For public surveys—base, standard parallel, exterior township, and subdivisional lines .....	66,978
For private claim surveys—private land claims confirmed by Congress under act of July 22, 1854 .....	15,000
	\$1,978
	99,878

T. RUSH SPENCER,  
*Surveyor General.*

SURVEYOR GENERAL'S OFFICE, *Santa Fé, New Mexico*, September 19, 1871.

### G.—*Mineral regions.*

#### GRANT COUNTY, NEW MEXICO.

Hon. T. RUSH SPENCER,  
*Surveyor General of New Mexico:*

SIR: These mines, situate very near to the dividing lines between New Mexico and Arizona and New Mexico and Chihuahua, form a direct link in the great mineral belt, extending from Alaska down to Central America. It may, from this fact, be assumed that the mineral veins are most probably true fissure-veins; another favorable indication in this regard is to be found in the great variety of minerals found in this district; in fact, hardly any of the useful or precious metals is missing, and all are represented in really marvelously rich ores.

The district proper is encompassed within a circle of about twelve miles diameter, the gold, silver, and iron mines of Pinos Altos forming the center. Of these mines I have already given a short description, which was embodied in the report of the commissioner on mines for 1870, and I shall therefore not now refer to them. Seven miles northeast thence lie the Hannover copper mines, six miles east the San José and Santa Rita copper and lead mines, and seven miles west the Silver Flat and Chloride silver mines. Toward the north the district has not yet been explored, on account of the hostility of the Indians.

Before entering into a particular description of the several mines, I deem it necessary to offer a few remarks in regard to the geological structure and the formation of the country. The mountain range in which these mines are located consists of spurs and branches of the San Francisco and Mogollon Ranges, north, both attaining the snow altitudes. These latter ranges are still *terra incognita*, the Apache Indians preventing their being thoroughly prospected; yet so much has been ascertained by stray prospecting parties that the country is extremely rich in minerals, principally gold. It was in this neighborhood where a soldier belonging to a scouting party under command of the renowned Indian fighter, Colonel Albert H. Pfeiffer, companion of the late Kit Carson, was shot by an Indian, and when the bullet was extracted it was found to be of gold; trappers and escaped Indian prisoners also report that it is a general custom with the warriors of the Coyotero Apaches, who live in these regions, to ornament their belts with gold nuggets.

Besides gold, these ranges contain very rich copper ores. I assayed myself a carbonate of copper from San Francisco Cañon which gave \$780 per ton silver.

Northeast of these ranges lie the mountain chains in which the Corona del Pueblo

mines are located. I intend visiting this district shortly, and shall give a full description thereof.

To the west of the Pinos Altos mining district lie the Ralston silver mines, and further on the Apache Pass gold mines.

To the south there is again an unexplored mountain range, very near or on the Mexican boundary line, Las Rosaritas, unquestionably rich, to judge from the float-rock that comes from thence, but inaccessible on account of the redskins, and further south the Coralitos silver mines, at the present time profitably worked.

I draw attention to the surroundings of these mines in order to show that the district is most favorably situated, and even if the indications of violent volcanic action are to be found almost through the entire district, I can only come to the conclusion that these eruptions took place long after the original formation of the metal-bearing fissure-veins.

Future experience must prove the correctness of this supposition, since until now none of these mines have been sufficiently prospected; yet not only the geographical position, but also the general character of the country rock, each point to a true mineral formation and fissure-veins.

Geology discloses a grand picture in these regions. The immense blocks of fine-grained granite, and the numerous fragments of basaltic rock, place the genesis of the country into the tertiary period; but not during that period the mineral deposits were formed, because the caps of the veins carry rock of silurian and Jura formations. Before any material changes could have taken place, and even before nature had covered the surface with its botanical ornaments to any extent, this solitary island in the antediluvial sea was again submerged, (proofs, absence of fossils in the lower strata,) but was resurrected from the slumber below the murmuring waves by the forcible and violent power of Pluto.

This second genesis could not have taken place but at a proportionally late period, because the plutonic conglomerate breaks through and overlies the jurassic lime-rock numerous petrifications in the latter stone of shells and mollusk and argillaceous sand are proofs of a long period of inundation.

Neptunic influence, however, had no considerable share in the formation of the present country; sedimentary deposits are few to be found; the bed-rock is encountered at a depth seldom exceeding 5 to 7 feet.

That the re-elevation of the continent must have been sudden and violent, is proved by the absence of the peculiar lines and streaks traced on the mountain sides of the slowly receding waves; neither are they to be found in the remarkable table-rocks and pyramids, generally encountered in other parts of New Mexico, where water has had sufficient time to trace its marks; none of the horizontal table mountains, standing down in straight lines at angles of  $45^{\circ}$ ; no level plains of a thin layer of decomposed tufa underlaid with coarse gravel; in fact, none of these unmistakable proofs of long aquatic action, such as New Mexico most particularly offers in so many instances.

Most probably at that time the mineral-bearing veins were formed, after which the country remained undisturbed for a long period, during which the decomposed rock, by the air and water, had time to be washed over the veins and so cover them; in Pinos Altos the main lead from which most of the wash-gold came has not been discovered yet on that account. During this period the continent must have continued to be elevated but slowly and imperceptibly, the same as it is rising yet this very moment; proof for such is found in the traditions of the inhabitants in regard to rivers which are now quite dry, in springs and wells having become dry, and many other signs of decrease of surface waters.

But before the country assumed its present aspect, it had to undergo another convulsion; volcanic action shattered and broke up some of the veins, reduced their minerals to a fiery fluid mass, and poured the same, with lava and cinders, over the surface. Such is the case at the Hannover mine. Most of the copper is found in a metallic state, imbedded in scoria and tufa, and only traces of the former vein, carrying mostly black sulphurets, the same as the Santa Rita, have remained. The Hannover is, strictly speaking, no vein lode, but a deposit covering an area of some three square miles. The same must have happened in Lone Mountain and Chloride districts, where the rich chlorides have filled up crevasses and seams. Pinos Altos seems to have escaped this disturbance, since there are no traces to be found there of late volcanic activity. It is, strictly speaking, also a different formation, since nowhere else iron-stone appears in such heavy masses, which also accounts for the presence of gold, of which there is no trace to be found in the surrounding districts.

Silver Flat district also shows signs of volcanic disturbance, but very different from the neighboring mines. Here a ferruginous conglomerate or tufa forms the cap of all the veins, in fact covers the surface of the entire district; and as this district is nearest to Pinos Altos, it is probable that the volcanic hearth whence that cover of lava was spread was situated within the iron belt surrounding Pinos Altos.

As regards the continuity of these mines, no correct idea can be formed as yet; still, I am disposed to favor this view; but I believe but few of the actual true fissure-veins



have as yet been discovered. Chloride district lies at the foot of higher mountains, which have not as yet been prospected, on account of the danger from Indians, but these, in my opinion, are the many ledges whence these deposits of rich chlorides came.

The Ralston mines, about sixty miles southwest from Silver Flat, and, strictly speaking, forming quite a separate district, show also different formation and structure. Here copper carbonate tufa, and most probably sulphate of copper further below, forms the matrix of the ore, and the contents in silver are small. None of these ores exceeded \$30 per ton. On the other hand, the district offers advantages over the others in the enormous masses of ore it will be able to produce, provided the veins prove themselves to be fissure-veins. Although apparently they bear all indications of permanency, still I would not vouch for it. The volcanic or possibly plutonic conglomerate in which they run is too unreliable. There is no trace of syenite or trap-rock. I consider it of vital importance for this district that one of the shafts should be sunk to about 50 or 60 feet; then only the true character of the formation can be ascertained.

After having given a general geological and geognostic outline of this mineral region, I now propose to give a detailed description of these districts—Silver Flat, Chloride, Lone Mountain, and Ralston. Pinos Altos I have already described, as stated, and the Hannover, San José, and Santa Rita copper mines have been treated upon in every pamphlet or report on the mines of this country, and I particularly refer to the able and correct report of Messrs. Owens and Cox, as contained in the pamphlet published by Hon. C. P. Cleves, when Delegate in Washington. That report is elaborate and entirely reliable, and I coincide with the complete persuasion, in the opinion of the gentlemen, that the Hannover is the richest mineral deposit ever discovered in New Mexico.

#### SILVER FLAT DISTRICT

is situate in a low foot-hill, embracing an area of about two square miles; a great many claims are located here, but with very little judgment and practical knowledge; in most cases the ferruginous tufa, filling up crevasses and pockets, was located as a silver-bearing lode. There are, however, a few apparently good leads, although no definite opinion can be arrived at, since none of them have been sufficiently opened. I examined myself the following, viz:

*Sample No. 1.*—Robert E. Lee; vein not yet well defined; ore still mixed up with ferruginous cap; at the bottom of a 30-foot shaft the gray sulphurets of silver come in.

*Sample No. 2.*—Legal Tender; shaft 32 feet deep; goes through the cap, and shows now 3 feet of gray sulphuret.

*Sample No. 3.*—Turin No. 2; shaft only 10 feet deep; opened at the side of a steep hill; shows very light cap, and carries rich chlorides. I do not consider it a vein as yet.

*Sample No. 4.*—Giant; 10-foot shaft; light cap; tolerably well-defined lead; no pure ore as yet.

These leads run all parallel, and are separated by spaces of 50 to 100 feet; direction northwest and southeast; dip nearly vertical.

*Sample No. 5.*—New Issue; 5-foot shaft; shows wide lead and rich ore, but cannot as yet be relied upon.

*Sample No. 6.*—Minnehaha; 20-foot shaft; irregular ledge, but good ore; light cap. These two leads are cross leads, and run almost due west and east, crossing the above four leads.

*Sample No. 7.*—Last Chance; about a mile off the above; shaft 10 feet; wide, irregular ledge; ore of very easy reduction; chlorides.

*Sample No. 8.*—Ecuador; shaft 5 feet deep; no regular vein; probably only a crevasse filling.

*Sample No. 9.*—Average ore from deepest shaft, (Legal Tender,) and probably the one which will predominate in all leads in this district. I am inclined to believe that a large deposit of this kind of ore will be found underlying the largest portion of this

#### CHLORIDE DISTRICT.

There are also in this district located a great many claims of doubtful nature; no shaft has as yet been sunk exceeding 5 feet, and the mines are in fact not prospected yet; the character of the ore is almost the same, with the exception of the Green Mountain lead, which carries a good deal of carbonate of copper; all others, as Gran Tesoro, Hidden Treasure, Seneca, Gran Quevira, Sherman, &c., have, until now, furnished nothing but chlorides; all are irregular, and, in my opinion, crevasse fillings; the entire hill, embracing an area of about three square miles, is literally covered with the same ore, and 400 to 500 tons of it could easily be mined.

*Sample No. 10.*—Is first-class ore, two tons of which were reduced and produced at the rate of about \$160 per ton; about one-sixth part of the general ore is of this class.

*Sample No. 11.*—Average second and third class ore.

## LONE MOUNTAIN DISTRICT.

In this district, situate about eight miles southeast from Silver Flat, there are located a great many claims which are evidently nothing but *crevasse* fillings, carrying rich flinty ore containing mostly chloride, iodide, and bromide of silver; in this district there was found a piece of almost pure metallic silver, seven pounds in weight, on the surface, among the eruptive rocks covering the ground, and exhibiting the same black porous appearance. The following leads, which I examined, have the appearance of permanency, but are not as yet sufficiently opened:

*Sample No. 12*—Twilight: Large well-defined lead crops out about 10 feet; runs along crest of a steep hill, traceable for about a mile; a tunnel run in about 5 feet below the croppings; shows an eight-foot vein, but the ore is not rich as yet. Wall rock syenite.

*Sample No. 13*—Metcalf lode: Doubtful, but rich ore, of which there are about ten tons on the ground.

*Sample No. 14*—Bulkhead lode: Shaft 30 feet; well-defined, four-foot vein; ore improving.

## RALSTON DISTRICT.

In case these mines should prove to be true fissure veins, which with their six-foot shafts cannot be ascertained, then they would be very valuable, notwithstanding the low-grade ores, on account of the enormous quantities; there are over two hundred claims located, and they could easily produce a supply of 400 to 500 tons a day; the River Gila but twenty-five miles distant, and a natural, easy-descending grade. The Southern Pacific Railroad must necessarily pass near these mines, and the ore could easily be taken to the river, and there reduced by amalgamation.

A sorry sight met my eye in these mines, the jumping of claims; the parties who inaugurated this always condemnable practice may possibly have the law on their side, and it was certainly a very injudicious law the miners made in limiting the depth of shaft to 6 feet, but still the claims were located and held *bona fide* in consequence of the inexplicit wording of the new United States mining law, which concedes to the miners of a district the right to make their own rules and regulations, and any one taking advantage of any misunderstanding or misinterpretation, renders himself liable to the just anger of the injured miners; almost in all cases this bad practice of jumping mines has been the cause of quarrel and bloodshed; the miner is compelled to protect himself against these land-sharks.

There is but little difference in the general character of the ores, copper predominating.

*Sample No. 15*—Valley lode.

*Sample No. 16*—Arnold.

*Sample No. 17*—Kate.

*Sample No. 18*—Winters.

I further add—

*Sample No. 19*—Average gold ore from Pinos Altos.

Before closing this report, I take occasion once more, as I did already in my report on Pinos Altos, to offer some remarks in regard to the causes which, until now, have prevented these mines from being profitably worked, as their superior character ought to warrant.

The country offers all possible advantages in regard to soil, climate, water and wood; no large grants impede the development of the mines, and yet the poor miner is starving—is compelled to make use of the most simple processes of reduction in order to extract, perhaps, 25 or 30 per cent. of the precious metals, and thus eke out a miserable existence.

The Indian, every one asserts, is the only cause.

True, the red man really is a curse to the country. Within the last five or six years hundreds of white men have fallen the victims of the bloodthirsty Apache, thousands of dollars' worth of stock has been run off by them; it cannot be denied that Government has not until now afforded that protection which the sturdy pioneer of civilization has the right to demand.

But there are two other just as important causes that have obstructed, heretofore, the development of these mines: mismanagement and incapacity on the part of the now ruined companies, and the hesitation of capital to risk investment where others have so signally failed. It is all over New Mexico that such is the case, and it cannot be wondered at that everybody is afraid to touch mines, and yet the mines are good.

I confidently trust that a new era will soon be inaugurated in this country in the prosecution of mining enterprises, and I, for one, can conscientiously invite the foreign capitalist to come and judge for himself, and I would guarantee there is not a mine to be found in the country which, with judicious and skillful management, will not give a fortune to its owners.

## THE CORONA DEL PUEBLO MINES, SOCORRO COUNTY, NEW MEXICO.

Relying upon the truthfulness of the many statements and reports which had reached me in regard to the exceeding richness of these mines, I paid a visit to the same with the intention of thoroughly examining the district.

The mines are situate about thirty miles due west from Socorro, on the western slope and foot-hills of the Magdalena Mountain range. An examination of two days disclosed to me the sore fact that, either intentionally or from ignorance, the condition of these mines had been grossly misrepresented and exaggerated in the papers, and that hardly any of the so-called mines had been sufficiently opened to prove it to be a vein.

Here, the same as in Ralston, the miners misunderstanding the meaning of the United States mining law, have, in violation of the territorial law, adopted the regulation that a five-foot shaft will hold the claim; and thereby not only expose their property to be jumped any time, but, what is worse, have not in most cases reached the vein, provided there is any, but expose to sight *crevasse* fillings of poor carbonates of copper and black feldspar.

The cause of the great mistake most of them committed in considering these deposits the real vein, was that float-rock, mostly carbonates rich in silver, was embedded in this surface formation.

The sinking of deeper shafts on a few leads, however, has shown that these surface ores do not continue further down, and in some of the mines there has been struck the ore which I consider to represent the true character of the district. I shall refer to the same in describing the several veins.

The general geological formation of the country is not favorable as far as now can be ascertained. A heavy bed of volcanic porphyry covers the surface, and at 32 feet depth of shaft has not been penetrated as yet. Wherever the underlying stratum crops out on the mountain-sides it consists of coarse, yellow, and impure sandstone, but no sign of slate, granite, or limestone. Toward the west traces of syenite are found.

The district is of great extent, and may be presumed to occupy the entire undulating high plateau between the mountain-ranges, Magdalena to the east, San Mateo to the south and west, and Gallenas and Ladrones to the north, forming an irregular ellipse measuring from east to west about thirty-two miles, and from north to south about fifty miles.

The greater part of this basin appears to be underlaid by an inferior quality of coal, a heavy bed of which crops out near the mines, another near the Ladrones; the west and south boundaries are still *terra incognita*.

The existence of the copper carbonates on the surface I ascribe entirely to volcanic action—the Magdalena Mountains must have produced it. The farther the district stretches west the less copper and tufa are found, and it is my opinion that the real and probably rich mining district has to be looked for farther west or southwest.

From the above-stated facts it is obvious that no correct opinion can as yet be formed about the value of the district, and even the samples of the ores, in most cases, cannot be relied upon as indicating the true character of the several leads; still, I have confidence in the ultimate success of these mines, and have no doubt that the miners will go to work with more energy and better judgment in prospecting their now very dubious property, as soon as the possibility is offered to them to have their ores benefited. True, also here, as in almost all mines, over-confident and sanguine individuals are found, who, in their shortsightedness, oppose progress and development, and would make no concessions to the so-much-needed capital; but experience will cure them.

Very sorry I was to see that also here a considerable amount of money has been injudiciously wasted in impotent trials to extract the precious metal by means of superannuated, inferior processes, such as arrastras, Mexican furnaces, &c., and even Coloradoan patent processes of doubtful reputation are making their appearance; but all these schoolboy experiments and humbug arrangements will disappear as soon as systematic work will offer assistance to these mines, and bring prosperity into the district, where now want and discouragement have created that most injurious disposition to misrepresent and exaggerate their condition and prospects.

The district, so far, has not been molested by the Indians, whose favorite haunt it has been in former times. The ruins of a large Apache village are still visible. The climate is salubrious, the pure mountain-air is invigorating, water is rather scarce, and a little impregnated with metallic salts, but may be rendered wholesome by filtration.

Of the mines examined by me I select those of which an approximately-correct opinion may be formed, omitting the great mass of those which are insufficiently opened; in the assays heretofore made of some of them I place no reliance, since in most cases only surface ores were tested. I name the mines as they are situate from east toward west.

2. The *Abbey lode*, shaft about 10 feet deep, shows a vein of about 15 inches of gray



sulphuret ore still mixed with some carbonate of copper. Carried rich surface ore; the southern extension shows similar ore at 5 feet depth.

3. The *Sophia* has a shaft 32 feet deep, but shows no regular vein, and no gray sulphurets; it appears to me the vein has been dislocated or shattered; the surface-ore was very rich, white fluorspar, carrying chloride; the company owning it have spent about \$5,000 in fruitless efforts to work the ore; they have erected arrastras, and worked with a so-called patent process; entertain a high opinion of their property, for which I can as yet see no good reason.

1. The *Great Eastern*, very little opened as yet, but shows a solid vein of 2 to 3 feet, the ore carrying gray sulphurets; promises well.

4. The *Tontine*, heavy croppings of white spar; discovery shaft not on the vein; might be opened well by running a tunnel on the ridge, about 100 feet below croppings, from the north side, where it dips into a valley; the croppings indicate a vein of 6 to 8 feet width. Is in hands of parties who will listen to no propositions, but who have no means to work the mine themselves.

The *Colfax* shaft, only 5 feet deep, shows a well-defined lead and very good ore; well opened, the mine may be made to produce from 5 to 8 tons of good ore a day; the owners are willing to enter into arrangements for the working of the ore.

The *Foster* shaft, only 5 feet deep, shows fair ore, but no defined ledge as yet; is owned by uncompromising parties.

The *Reinhart* shaft, 16 feet deep, shows about the same ore as the *Colfax*, and is, in my opinion, the same vein; the lead carries about 4 feet of pay ore, and could supply a reduction works with 8 to 10 tons of good ore per day. I believe the owners would also be willing to enter into contract for the working of their ore. I consider it, so far, the best mine in the district.

The coal crops out about twelve miles south of the mines, in a bed of over 30 feet, dipping down at an inclination of over 60°; is very impure, and evidently upheaved and dislocated.

In conclusion I beg to direct the attention to a coal-bed of considerable extent and of excellent quality, situate on the eastern side of the Rio Grande, at a distance of about forty miles due east of the Corona del Pueblo, which I took occasion also to visit in search of good fire-clay, which I succeeded in finding there in great abundance. This bed shows all the indications of the true formation, and covers an area of ten to twelve square miles. Iron ore is said to be found there also, although I did not find any myself; and further, it is asserted by several parties that metallic copper was found near these mines. The surrounding country has not been prospected as yet, but offers, in my opinion, a promising field for exploration.

F. STURENBURG,  
*Metallurgist.*

AUGUST, 1871.

H.

CIMARRON SECO,  
*Colfax County, New Mexico, July 15, 1871.*

DEAR SIR: I came into New Mexico during the summer of last year, (1870,) bringing with me from Connecticut fifty full-blood Cotswold bucks, bred from sheep imported from the flock of Robert Games, a well-known and very popular herder of Cotswold sheep in England.

Desiring to test the capacity of the sheep of this country for improvement by crossing with one of the most popular breeds of long or combing-wool sheep, I procured nearly three thousand Mexican ewes, and selected a location here, quite in the northern part of the Territory. I find the climate, soil, and natural grazing admirably adapted to the growth of sheep and wool. My sheep lived and kept in good condition throughout last winter on the natural grazing, with no other supply of food whatever. At the lambing, which commenced about the 1st of May, I found my ewes in fully as good flesh as is desirable at that time.

My lambs (from the Cotswold bucks) are far better both in size and quality than I expected. Many of them weighed from 12 to 14 pounds each when dropped, and at seven or eight days old weighed from 23 to 25 pounds. I think, for improving the native Mexican sheep, that the *grade* Cotswold buck is preferable to the *full blood*, for this reason: the excessive size of the lamb from the latter and the common-size Mexican ewe is such as to jeopardize the life of both ewe and lamb. Had I not secured the most vigilant watchfulness and skillful assistance for the ewes this spring, I feel quite sure I should have lost half the flock from that cause.

Of the improvement in quantity and quality of fleece by this cross I, of course, can tell you nothing till these are sheared next spring. This year my Mexican ewes averaged a little more than 1½ pounds per fleece and my Cotswolds about 11 pounds. I think I may reasonably expect from my half-bloods next spring an average of 5 pounds of a quality of wool that will be worth at least 25 per cent. more in the eastern market than the common Mexican wool.

Very respectfully, your obedient servant,

P. R. SKINNER.

Hon. T. RUSH SPENCER,  
*Surveyor General of New Mexico, Santa Fé, New Mexico.*

II.—*Report of the surveyor general of Colorado Territory.*

SURVEYOR GENERAL'S OFFICE,  
*Denver, Colorado Territory, October 10, 1871.*

SIR: I have the honor to submit the official operations of this office for the year ending June 30, 1871:

Statement A, showing the surveys made under the regular appropriation for the year ending June 30, 1871.

Statement B, showing the surveys made under the act of Congress approved July 15, 1870, on the Union Pacific Railroad grant.

Statement C, showing the surveys made under the act of Congress approved July 1, 1870, on the Nolan grant.

Statement D, containing the names and number of mining claims, together with the area and amount deposited to pay for the same. Surveyed under the act of Congress approved July 26, 1866.

Statement E, containing the number of townships surveyed during the year ending June 30, 1871, and the area of public land contained in the same.

Statement F, containing the amount of salaries paid the surveyor general and clerks in his office for the year ending June 30, 1871, and incidental expenses of the office for the same period.

This Territory is rapidly filling up with settlers, and the demand for surveys comes from all parts. In view of the rapid settlement of the southern portion of the Territory the private Mexican land grants contained therein should be set off and their out-boundaries defined, also that of the Ute Indians in the western portion of this Territory, to enable the settlers and miners to know which is public land.

The agricultural interests of the Territory have been successful during the past year, and although the present year has been one of extreme heat and dryness, the crops will be very large. The mines have yielded largely and new discoveries add to the almost boundless wealth of this Territory.

During the present year the Denver and Rio Grande Railway will be completed to Colorado City, seventy miles south of Denver. This railway is the first one of any length built in the United States on the narrow-gauge system, being thirty-six-inch gauge. That it will prove a success there can be no doubt, on account of its cheapness of construction and operation.

What I have said in my former reports could be again repeated in this, but I deem it unnecessary to do so as Colorado fertility and mineral resources are so well known that I need not repeat them.

Hoping this may meet with your approval, I am, very respectfully, your obedient servant,

W. H. LESSIG,  
*Surveyor General of Colorado.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*

A.—*Statement of account of surveys made under regular appropriation for the fiscal year ending June 30, 1871.*

No.	Date of account.	Name of deputy.	Amount.	Appropriation.	Am't.
	1870.				
105	Sept. 30..	To R. Blackstone .....	\$600 02	By appropriation of July 12, 1870.	\$40,000
100	Oct. 8..	To A. Farmer .....	3,304 91		
104	Oct. 25..	To E. D. Bright .....	1,556 85		
97	Nov. 4..	To J. Hulartz .....	5,514 01		
101	Nov. 8..	To George H. Hill .....	6,287 16		
102	Nov. 9..	To Boutelle & Whittemore ..	1,405 37		
99	Nov. 18..	To A. M. Fahringer .....	6,033 63		
106	Nov. 23..	To E. H. Kellogg .....	1,277 89		
98	Nov. 23..	To W. A. Christian .....	3,592 06		
100	Nov. 30..	To A. Farmer .....	3,916 93		
102	Dec. 30..	To Boutelle & Whittemore ..	535 04		
	1871.				
98	Jan. 6..	To W. A. Christian .....	4,113 41		
100	Jan. 6..	To A. Farmer .....	60 00		
112	Jan. 2..	To E. H. Kellogg .....	1,111 24		
108	Jan. 2..	To B. M. Whittemore .....	617 87		
		To balance .....	73 61		
		Total .....	40,000 00		40,000



## B.—Statement of account of surveys made under act of July 15, 1870, within the limits of land grant of Union Pacific Railroad.

No.	Date of account.	Name of deputy.	Amount.	Appropriation.	Amount.
107	1871.				
109	Feb. 8..	To A. M. Fahringer .....	\$3,465 07	By appropriation July 15, 1870	\$10,000 00
107	May 16..	To George Hardman .....	5,019 89		
	May 20..	To A. M. Fahringer .....	1,128 17		
		To balance.....	386 77		
			10,000 00		10,000 00

## C.—Statement of account of surveys made under act of July 1, 1870, on Nolan Grant.

No.	Date of account.	Name of deputy.	Amount.	Appropriation.	Amount.
110	1871.				
110	.....	To George H. Hill.....	\$3,487 13	By appropriation July 1, 1870. (See act.)	
111	.....	To A. W. Archibald .....	1,805 56		

D.—Statement containing the names and number of the mining claims, together with the area and amount deposited to pay for the same, surveyed under the act of Congress approved July 26, 1856.

No.	Name.	No. of district.	Name of district.	County.	Township.	Area in acres.	Approved.	Character of lode.	Total amount.	Office.
73	Kipp.....	1	Gregory	Gilpin	3 S 73	0.949	June 16, 1871	Gold and silver....	40	\$16
74	Tambus & Warren.....	1	Nevada	do.	3 S 73	1.836	July 5, 1871	do.	40	16
75	Iring.....	1	do.	do.	3 S 73	0.343	July 5, 1871	do.	40	16
76	Leavit.....	1	Gregory	do.	3 S 73	2.379	July 5, 1871	do.	40	16
77	Elliot.....	1	do.	do.	3 S 73	0.036	July 5, 1871	do.	40	16
78	Ingalls.....	1	Illinois Central	do.	3 S 73	0.917	July 19, 1871	do.	40	16
79	Gardner.....	1	Nevada	do.	3 S 73	1.147	July 19, 1871	do.	40	16
80	Gardner.....	1	do.	do.	3 S 73	1.147	July 19, 1871	do.	40	16
81	Gilpin County.....	1	Enterprise	do.	3 S 73	2.295	July 27, 1871	Silver	40	16
82	Cooley.....	1	do.	do.	3 S 73	1.512	July 27, 1871	do.	40	16
83	Roderick Dhu.....	1	Illinois Central	do.	3 S 73	0.457	July 27, 1871	Gold and silver....	40	16
84	Justice.....	1	Russell	do.	3 S 73	1.033	do.	do.	40	16
85	Ohio.....	1	do.	do.	3 S 73	1.147	do.	do.	40	16
86	Camp Grove.....	1	Nevada	do.	3 S 73	1.432	Sept. 10, 1871	do.	40	16
87	Kansas.....	1	do.	do.	3 S 73	0.251	Sept. 10, 1871	do.	40	16
88	Sullivan.....	1	do.	do.	3 S 73	1.383	Sept. 10, 1871	do.	40	16
89	Kansas.....	1	do.	do.	3 S 73	0.114	Sept. 10, 1871	do.	40	16
90	Grand River.....	1	do.	do.	3 S 73	1.377	Sept. 10, 1871	do.	40	16
91	Kansas.....	1	do.	do.	3 S 73	2.370	Sept. 10, 1871	do.	40	16
92	Cork.....	1	do.	do.	3 S 73	0.647	Sept. 15, 1871	do.	40	16
93	Kent County.....	1	do.	do.	3 S 73	1.033	Sept. 29, 1871	do.	40	16
94	Jones.....	1	do.	do.	3 S 73	0.918	Dec. 3, 1870	do.	40	16
95	Mountain.....	1	Enterprise	do.	3 S 73	4.015	Dec. 5, 1870	do.	40	16
96	Bobtail.....	1	Gregory	do.	3 S 73	0.574	Oct. 10, 1870	do.	40	16
97	Cook.....	1	do.	do.	3 S 73	0.918	Oct. 6, 1870	do.	40	16
98	Silver Cloud.....	1	Enterprise	do.	3 S 72	1.832	Dec. 12, 1870	do.	50	16
99	Golden Flint.....	1	Independent	do.	3 S 73	1.607	Dec. 5, 1870	do.	50	16
100	Topeka.....	1	Russell	do.	3 S 73	1.148	Nov. 26, 1870	do.	40	16
101	Illinois.....	1	Illinois Central	do.	3 S 73	2.077	Nov. 23, 1870	do.	40	16
102	Confidence.....	1	do.	do.	3 S 73	2.446	Nov. 23, 1870	do.	50	16
103	Seaverberg.....	1	Nevada	do.	3 S 73	0.985	Oct. 20, 1870	do.	40	16
104	Adaline.....	1	do.	do.	3 S 73	0.252	Nov. 26, 1870	do.	40	16
105	Pierce.....	1	Central City	do.	3 S 73	1.236	Nov. 30, 1870	do.	40	16
106	Blisk.....	1	Gregory	do.	3 S 73	0.159	Feb. 1, 1870	do.	40	16
107	Federal.....	1	Russell	do.	3 S 73	1.836	Nov. 30, 1870	do.	60	16
108	Bobtail.....	1	Gregory	do.	3 S 73	2.641	Feb. 1, 1870	do.	40	16
109	Grisley.....	1	Russell	do.	3 S 73	1.779	March 11, 1870	do.	40	16
110	Barroughs.....	1	Nevada	do.	3 S 73	0.025	Feb. 1, 1870	do.	40	16
111	Pozo.....	1	do.	do.	3 S 73	1.346	April 1, 1870	do.	40	16
112	Estimate.....	1	Illinois Central	do.	3 S 73	1.407	April 14, 1870	do.	3.5	16
113	St. Louis.....	1	Eureka	do.	3 S 73	0.561	April 17, 1870	do.	40	16
114	Mammoth.....	1	Gregory	do.	3 S 73	3.065	April 20, 1870	do.	40	16





E.—Statement showing the number of townships surveyed during the fiscal year ending June 30, 1871, and the area of public land contained in the same.

Township.	Range.	Area.	Township.	Range.	Area.
10 north .....	49 west .....	23, 041. 25	9 north .....	65 west .....	22, 998. 11
9 north .....	50 west .....	23, 071. 44	10 north .....	65 west .....	22, 953. 12
10 north .....	50 west .....	23, 060. 67	7 north .....	66 west .....	23, 078. 90
9 north .....	51 west .....	23, 062. 97	8 north .....	66 west .....	23, 051. 84
11 north .....	52 west .....	22, 940. 23	9 north .....	66 west .....	22, 987. 17
12 north .....	52 west .....	10, 057. 87	10 north .....	66 west .....	22, 968. 89
11 north .....	53 west .....	23, 015. 28	16 south .....	66 west .....	23, 116. 83
12 north .....	53 west .....	10, 079. 47	7 north .....	67 west .....	22, 979. 93
11 north .....	54 west .....	23, 092. 23	8 north .....	67 west .....	22, 968. 64
12 north .....	54 west .....	10, 079. 36	9 north .....	67 west .....	23, 069. 24
11 north .....	55 west .....	23, 013. 83	10 north .....	67 west .....	22, 947. 43
12 north .....	55 west .....	10, 017. 86	9 south .....	68 west .....	16, 299. 40
6 north .....	63 west .....	22, 933. 30	1 south .....	71 west .....	18, 590. 54
7 north .....	64 west .....	22, 890. 89	2 south .....	71 west .....	23, 187. 74
8 north .....	64 west .....	22, 916. 48	2 south .....	72 west .....	23, 033. 11
9 north .....	64 west .....	23, 061. 56	23 south .....	72 west .....	23, 166. 77
10 north .....	64 west .....	23, 104. 00	8 south .....	75 west .....	22, 991. 11
7 north .....	65 west .....	33, 138. 46	8 south .....	76 west .....	22, 879. 52
8 north .....	65 west .....	23, 005. 41			

F.—Statement of amount paid surveyor general and clerks in his office for the fiscal year ending June 30, 1871.

Date.	To whom paid.	Amount.	Appropriation.	Amount.
1870.				
Sept. 30	W. H. Lessig, surveyor general ..	\$750 00	By appropriation of July 12, 1870 ..	\$7, 000 00
Sept. 30	E. M. Ashley, chief clerk .....	450 00		
Sept. 30	J. H. Bonsal, draughtsman .....	375 00		
Sept. 30	H. L. Thayer, transcribing clerk ..	375 00		
Dec. 31	W. H. Lessig, surveyor general ..	750 00		
Dec. 31	E. M. Ashley, chief clerk .....	450 00		
Dec. 31	J. H. Bonsal, draughtsman .....	375 00		
Dec. 31	H. L. Thayer, transcribing clerk ..	375 00		
1871.				
Mar. 31	W. H. Lessig, surveyor general ..	750 00		
Mar. 31	E. M. Ashley, chief clerk .....	450 00		
Mar. 31	J. H. Bonsal, draughtsman .....	279 17		
Mar. 31	H. L. Thayer, transcribing clerk ..	333 33		
June 30	W. H. Lessig, surveyor general ..	750 00		
June 30	E. M. Ashley, chief clerk .....	450 00		
June 30	E. W. Cobb, transcribing clerk ..	48 91		
	Balance .....	38 59		
		7, 000 00		7, 000 00

INCIDENTAL EXPENSES.

1870.				
Sept. 30	To expenses third quarter, 1870 ..	\$410 43	By appropriation of July 12, 1870 ..	\$2, 000 00
Dec. 31	To expenses fourth quarter, 1870 ..	392 15		
1871.				
Mar. 31	To expenses first quarter, 1871 ..	376 13		
June 30	To expenses second quarter, 1871 ..	698 68		
	Balance .....	112 61		
		2, 000 00		2, 000 00

*Statement of account of surveys made under act of May 30, 1862. (Special deposit.)*

No.	Date.	Name of deputy.	Amount.	Appropriation.	Amount.
103	1870.				
	Sept. 16	To Richard Blackstone.....	\$45 17	By deposit by John Gaines.....	\$80 00
	Sept. 16	To John Gaines, depositor..	34 83	By deposit by W. H. Greenwood....	1,350 00
	1871.				
	Mar. 13	To R. M. Kidder .....	1,221 84		
	Mar. 13	To W. H. Greenwood, de- positor.	128 16		
			1,430 00		1,430 00

### *I.—Report of the surveyor general of Montana Territory.*

SURVEYOR GENERAL'S OFFICE,  
*Helena, Montana Territory, July 18, 1871.*

SIR: I have the honor to transmit herewith, in duplicate, the usual annual report and accompanying map and statements, to wit:

A.—Showing condition of the appropriation for surveys of the public lands in Montana for the fiscal year ending June 30, 1871.

B.—Showing amount of deposits made for field and office work, and the publication of notice in cases of mineral claims.

C.—Showing list of lands surveyed in Montana since June 30, 1870.

D.—Showing condition of surveys contracted for by surveyor general of Montana, under appropriation by Congress, for the fiscal year ending June 30, 1871.

E.—Showing condition of contracts for mineral surveys.

F.—Showing the number of township plats, descriptive lists of land, and corners furnished the Helena land office since June 30, 1870.

G.—Showing condition of appropriation for clerks in surveyor general's office for the fiscal year ending June 30, 1871.

H.—Showing condition of appropriation for salary of surveyor general for the fiscal year ending June 30, 1871.

I.—Showing condition of appropriation for the incidental expenses of the surveyor general's office for the fiscal year ending June 30, 1871.

J.—Estimate of the amount necessary for the surveying service in Montana for the fiscal year ending June 30, 1873.

#### SURVEYS.

The public surveys in this district, during the past year, have been protracted to within about \$223 of the extent of the appropriation. The second standard parallel south has been extended through townships 5, 6, 7, 8, and 9 west, partly by township offsets to the north, around the mountains.

A guide-meridian north, from the second standard parallel south, to the first standard parallel south, between ranges 8 and 9 west.

The first standard parallel south has been extended through range 8 west.

The Bitter Root guide-meridian has been established between ranges 19 and 20 west, through townships 13 and 14 north.

The Boulder guide-meridian, from the first to the second standard parallel north, between ranges 3 and 4 west.

Smith's River guide-meridian has been run from the second to the third standard parallel north, between ranges 4 and 5 east.

The second standard parallel north has been extended through ranges 4, 5, and 6 east.

These lines open up the Beaver Head, Rattlesnake, Boulder, Bitter Root, and Smith River valleys.

In addition to the standard lines, 46 townships in the different valleys have been surveyed, and returns made of the same to the General Land Office, and proper plats and descriptive lists filed in the district land office.

#### OFFICE-WORK.

During the year 153 township plats, 14 diagrams of standard and township lines, 21 maps of mineral claims, and 3 maps of the Territory have been drawn, and several other maps and sketches furnished certain officers and citizens through courtesy.

The original field-notes of 114 miles 67.27 chains of standard lines, 418 miles and

29.72 chains of township lines, and 2,288 miles 39.94 chains of subdivision lines, amounting in all to 2,821 miles 65.93 chains, have been carefully examined, and found to be in conformity with the laws of the United States and the instructions of this office, transcribed for the General Land Office, and filed in this office to await the finishing labor of the binder. The cost of these 282 and odd miles of public survey has only been \$29,776 67, and the total office expenses \$8,579 56, making an aggregate expenditure of \$38,356 53.

Eight hundred and seventy-three thousand seven hundred and sixteen twenty-six-hundredths acres have been added to the surveyed domain and placed at the disposal of the Helena land office for sale. The actual cost has only been 4.39 cents per acre, including all expenses. The amount of public land surveyed this year will bring into the Government eventually a revenue from this Territory of \$1,092,145 22.

The contract map in this office, and the accompanying map of the Territory, will show the work of the year above alluded to.

On account of the mountains the surveys present a dislocated and irregular shape, as if no plan had been followed in their projection; nevertheless great care has been taken in that regard.

There have only been seven applications for mineral surveys made to this office during the year, for which special deposit has been made in the First National Bank at Helena, of \$175 for office-work. The law and instructions in regard to mineral claims are so complicated and changeable, that many persons are not willing to avail themselves of the privileges of the law. Attorneys charge large fees for making out the papers in a mineral case, and there are but few miners who can stand the expense; hence the cause of so few purchasers of mineral land.

The usual amount of time and labor has been expended in the miscellaneous work of preparing contracts and bonds of surveys in quadruplicate, special instructions in duplicate, and recording them; diagrams, outline maps, and field-notes for guidance of deputies in the field; examination and correction of the original field-notes of the public surveys, as they are returned by the deputies; official correspondence and record of same; making out and recording the accounts of deputy surveyors, and the quarterly accounts of the office in duplicate, with the recording of same, and certificates to vouchers. This report alone in triplicate, to be reliable, consumes much of the time of the office.

The general statistics required by the honorable Commissioner, and embodied in this report, so useful in exhibiting the industrial and other resources of Montana, have made necessary an extensive correspondence and personal examination with persons in possession of the information sought.

The preparation of a large map of the Territory, like the one accompanying this report, and the retained copy of the same for use in this office, is also the work of several weeks for one draughtsman, and being reduced from the original township maps, and other semi-official sources, is a compilation of very reliable information and topography of the country it exhibits.

#### PROJECTED SURVEYS.

The work proposed in this district for the next fiscal year is with a view of extending the subdivisions within the limits of the Judith Basin and Yellowstone Valleys on the east; the continuation of the surveys on the Sun and Teton Rivers on the north; the extension of the lines to Horse and Thompson's prairies on the west; and the finishing up of scattering fractional townships on the south.

To meet the wants of the frontier settlements in the various fertile valleys of this Territory, seems now to be the main object. Pioneer organizations for civilization and mutual protection, in our beautiful valleys, are already on the march, and will soon be far in advance of the public surveys. The construction of the Northern Pacific Railway will soon open up vast valleys and plains to settlement, which are now impossible of access to the emigrant.

It is therefore earnestly recommended that Congress will appropriate the amount stated in the accompanying annual estimate, for surveys, although much larger than the appropriation for 1871.

#### STATISTICS.

The following are the names of counties, with the number of square miles in each: Choteau, 14,195 square miles; Dawson, 30,390 square miles; Big Horn, 25,862 square miles; Lewis & Clarke, 2,819 square miles; Meagher, 11,051 square miles; Jefferson, 2,198 square miles; Madison, 4,168 square miles; Beaver Head, 4,333 square miles; Deer Lodge, 11,732 square miles; Missoula, 20,091 square miles; Gallatin, 6,200 square miles.



The following table of the population of the Territory, by counties, is taken from the census returns, as compiled by W. F. Wheeler, United States marshal for this district :

Counties.	Dwellings.	Families.	White males.	White females.	Colored males.	Colored females.	Mulatto males.	Mulatto females.	Indian males.	Indian females.	Half-Indian males.	Half-Indian females.	Fourth-Indian males.	Fourth-Indian females.	Eighth-Indian females.	Male Chinese.	Female Chinese.	Males of foreign birth.	Females of foreign birth.	Total inhabitants.
Beaver Head...	363	392	595	120	1											3	2	162	17	721
Big Horn .....	17	14	38															132		38
Choteau .....	160	36	344	17	14	4	2		1	16	36	63	13	4		3		125	5	517
Dawson .....	65	61	147	1	4				13		7	4						38		177
Deer Lodge*...	2,620	1,152	3,000	505	12	2			9	16	14	14				719	54	2,034	179	4,356
Gallatin .....	422	353	1,182	380	4	2			2	4						2	2	278	52	1,578
Jefferson .....	995	920	1,112	294			1		1				3	1	3	121	1	447	42	1,537
Lewis & Clarke	1,642	1,336	3,303	933	40	16	18	12	3	5		11	20	6		602	61	1,713	259	5,030
Madison .....	1,184	996	1,659	688	13	5	1		1	3	7	9				201	7	640	135	2,684
Meagher .....	1,125	680	1,017	239	13	4										24		407	35	1,387
Missoula .....	737	721	2,084	233	3		7	1	3	12	46	50	46	25	1	42	2	1,077	34	2,555
Total.....	9,330	7,291	14,582	3,410	104	33	29	13	33	56	111	154	80	38	1	1,607	129	6,933	758	20,580

\* 155 should be taken from Deer Lodge and added to Beaver Head, as French Gulch is in the latter county.

The number of vacant houses is 2,039. Colonel Wheeler remarks, "that it is well known that from July, when water gets low, and a great deal of mining closes, and until winter sets in, a large number of men leave their houses and go on prospecting tours." The average number of persons living in families is two and six-tenths. Say that but two persons occupy each of the 2,039 vacant houses, and we have an absent population of 4,078, which, added to the number of persons actually enrolled, 20,580, gives us a population of 24,658, or in round numbers, I think, we have fully 25,000 inhabitants in our Territory.

The colored people do not seem to seek this northern country, numbering but 1 in 115.

Compared with the colored population the Chinese are ten times more numerous. The table shows that they are located in the three best mining counties in the Territory.

There are but a few Indians, with their various degrees of admixtures, living with the whites, numbering 473. But 87 of these are of unmixed blood. They are generally old and poor, and follow their children into their homes with white men.

The total population, classified as to races, is as follows :

Whites .....	17,995
Negroes and of unmixed blood .....	179
Indians and mixed blood living among whites .....	473
Mongolians .....	1,936
Total .....	20,580
To this may be added the Indians living in tribes, under charge of Colonel J. A. Viall, superintendent Indian affairs .....	18,000
Total inhabitants of Montana .....	38,580

#### POPULATION OF PRINCIPAL TOWNS.

Helena .....	3,713
Virginia City, (capital) .....	867
Deer Lodge .....	789
Diamond City .....	460
Benton .....	435
Bannack City .....	381
Radersburgh .....	311
Bozeman City .....	165
Missoula .....	119

The table presented below shows the extent to which the several counties of Montana have engaged in agriculture, as compiled from the census returns of 1870, by William F. Wheeler, United States marshal :

Names of counties.	No. of farms.	Value of farms.	Value of farm implements.	Wages paid in the year.	No. of horses.	No. of mules.	No. of cows, calves, and stock cattle.	No. of oxen.	No. of hogs.	No. of sheep.	Value of all live stock.	No. of bushels spring wheat.	No. of bushels winter wheat.	No. of bushels rye.	No. of bushels corn.
Choteau.....	4	\$7,500	\$700	\$1,250	196	27	236	1,175	11		\$74,197	200			
Big Horn.....	1			250						19	314,106	12,431			225
Lewis and Clarke.....	109	69,100	11,015	34,351	1,106	395	3,689	2,296	576						
Meagher.....	69	63,950	16,560	30,302	391	82	3,379	396	367					200	61
Jefferson.....	105	103,190	26,183	37,340	859	170	6,377	1,353	133	2,757	308,494	4,407		266	
Madison.....	102	61,200	17,100	32,562	1,455	302	7,056	812	350	21	383,883	11,652		100	
Beaverhead.....	51	14,620	3,055	22,658	584	41	4,851	225	109	1,100	185,420				
Deer Lodge.....	112	78,750	12,515	18,700	1,477	181	6,430		298	22	327,132	485			
Missoula.....	95	96,720	32,525	11,810	793	262	3,843	394	847	293	254,304	32,081			250
Gallatin.....	178	116,850	33,435	101,292	759	187	7,062	1,208	352		340,521	84,614		575	8
Total.....	871	615,880	133,038	290,715	8,630	1,647	42,943	7,832	3,008	4,212	2,308,321	172,531	3,649	1,141	544
Names of counties.	No. of bushels oats.	No. of bushels barley.	No. of bushels buckwheat.	No. of bushels peas and beans.	No. of bushels Irish potatoes.	Value of produce of market gardens.	No. of pounds butter made.	No. of pounds cheese made.	No. of gallons milk sold.	No. of tons hay cut.	No. of bushels grass seed.	Value of home manufactures.	Value of animals slaughtered or slaughtered.	Estimated value of all farm products, including investments to stock.	
Choteau.....					50		600			70		\$200	\$150	\$85,904	
Big Horn.....				1,107	6,230	\$2,325	85,190	1,400	45,420	1,815		17,420	3,290	1,300	
Lewis and Clarke.....	3,902	4,528			6,419	5,515	29,561	1,600	14,966	1,763		14,687	6,200	134,630	
Meagher.....	14,501	11,324			11,683		67,465	4,650	3,580	2,402			3,290	347,854	
Jefferson.....	11,589	6,575		265	17,065	3,750	28,470	4,650	6,500	1,140			28,805	137,542	
Madison.....	15,768	11,130					64,700	4,100		1,503				118,710	
Beaverhead.....	290	450			7,900		35,735	2,525	7,750	4,255				133,900	
Deer Lodge.....	11,510	4,600		600	12,132	1,600	12,925	2,900					1,600	141,005	
Missoula.....	15,836	1,534	88	342	15,388	3,090	58,351	7,778	2,170	2,905			11,036	140,245	
Gallatin.....	68,530	37,530									31		36,559	367,322	
Total.....	141,836	77,671	88	2,314	75,857	16,280	374,200	26,903	80,356	16,889	31	141,397	146,619	1,608,272	

From the above table it will be seen that the people have made a splendid commencement in farming and stock raising, although mining is, as yet, the chief business of the Territory.

It will be seen that Gallatin County takes the lead in products of the farm; Jefferson in the number of domestic cattle; Missoula, in horses; Lewis & Clarke, in butter; and Gallatin, in cheese.

The assessed and true value of real and personal property, owned by the people of Montana, is stated in the following table; also the indebtedness of the several counties, as compiled from the census of 1870 by Colonel Wheeler:

Names of counties.	- ASSESSED VALUATION.			True valuation of real and personal.	Bonded debt.	Other debts.
	Real estate.	Personal.	Total.			
Beaver Head.....	\$106,043	\$320,169	\$406,212	\$528,541	.....	\$700
Choteau.....	46,000	299,000	345,000	475,000	.....	1,750
Deer Lodge.....	321,600	1,188,872	1,510,472	2,114,660	\$12,006	80,000
Dawson.....	12,500	87,800	100,300	144,460	.....	.....
Gallatin.....	150,753	565,140	715,893	894,866	8,660	12,000
Jefferson.....	45,195	454,805	500,000	500,000	(*)	(*)
Lewis & Clarke.....	1,346,185	2,090,299	3,436,484	5,242,430	20,000	50,000
Madison.....	488,505	1,116,186	1,604,691	4,131,648	31,700	14,500
Meagher.....	103,800	592,810	696,610	696,610	.....	20,000
Missoula.....	186,341	520,202	706,543	1,071,057	6,000	11,000
Total.....	2,806,922	7,215,283	10,022,205	15,788,800	77,706	189,950

(\*) Not reported.

The actual wealth of the people in the United States in 1860 was \$513 each. Now, as per the above table, the real and personal property in Montana amounts to \$15,788,800. This gives an average of a little over \$1,082 to each white person, or an average of over \$763 to each enrolled inhabitant. I think no State in the Union can show more wealth to the individual.

In New York State it is estimated that there is one voter to every six of the population. The same ratio would give us 64,692 people.

The number of Chinese males is 1,807, and females 129, making a total of 1,936, or nearly one-tenth of the entire population, excluding Indians. These people are increasing by immigration very rapidly; they have no children or wives here. Both sexes are ignorant and superstitious; the males, however, are industrious and well behaved, while the females are generally indolent and lazy.

I should judge that there are 3,000 Chinese in Montana. The males are generally engaged in mining and domestic duties, earning a good deal of money, but give in nothing and should not be counted in the general average.

The total indebtedness of the counties, as reported in the above table, is \$267,656, making the average to each person \$13. The proportion varies much in the several counties.

#### TAXATION.

The amount raised by taxation in the several counties, for territorial, county, and school purposes, is as follows:

Choteau.....	\$4,320 00
Lewis & Clarke.....	79,666 00
Meagher.....	7,000 00
Madison.....	43,800 00
Deer Lodge.....	34,400 00
Beaver Head.....	8,810 00
Missoula.....	10,800 00
Gallatin.....	13,869 00
Jefferson.....	6,515 00
	<u>209,178 00</u>

Dawson and Big Horn have no county organization, are not assessed, and pay no taxes. By comparing the above with the table of indebtedness, it will be observed that some of the counties pay each year as much as they owe; the average being about three-fourths. The laws of Montana do not tax the mines nor the capital invested in them.



## SCHOOLS AND CHURCHES.

The number of children attending school in 1870, in the organized counties, was, males 1,027; females, 873; total 1,900. The number of persons over ten years of age who cannot read, as returned by Colonel Wheeler, is 841. These are mostly Indians and half-breeds living with the whites.

The Methodists have five churches, which will accommodate 1,450 persons, and are valued at \$16,000.

The Episcopalians have one church, which will accommodate 700, and, with their other church property, is valued at \$5,500.

The Catholics have five churches and other property, valued at \$77,000, and church accommodations for 1,700.

## MORTALITY.

The number of deaths for the year ending June 30, 1870, was reported at 175, or one in 117 of the inhabitants. Of these, 129 died of disease, and 46 from accident or violence. We have no returns for this year. In 1860, in the whole United States, there was one death to each 69 of the inhabitants. Thus it is seen that Montana is more healthy than the average of the country.

## PRODUCTS OF INDUSTRY.

Lumber is furnished in every county at reasonable rates, for all purposes, in sufficient quantities to satisfy all demands. Pine, fir, and spruce timber is in abundance on the mountains, but it is generally difficult of access. There is some cedar to be had, but it is small and scrubby.

Flour is produced in quantities by our local mills, yet in some localities money might be profitably invested in new ones. We have foundries, machine-shops, carriage and wagon shops, but no cotton or woolen mills. All hard wood for mechanical uses is shipped from the States. Nearly every town has a brewery. Two distilleries make wheat and rye whisky, I am told, of good quality. Labor is too expensive to be used in manufactures.

Experienced miners command from \$4 to \$6 per day; carpenters, \$5; bricklayers, \$8; plasterers, 75 cents per yard; mechanics and blacksmiths, \$5; clerks, from \$150 to \$250 per month; farm hands, \$50 per month; teamsters from \$40 to \$60; common laborers, from \$2 to \$5 per day. Day board, \$8 to \$10 per week. Rents are high. Profits on merchandise must be good, else merchants could not prosper as they seem to do, under their heavy expenses of clerk hire, rents, and high freights.

Helena is the center of trade and traffic, and is reached from Corinne, a distance of five hundred miles, by coach in three days; fare, \$75; and from Fort Benton, a distance of one hundred and fifty miles, by coach; fare, \$25.

The following is the number of miles of mineral ditches and their cost now constructed in the different counties:

	Miles.	Cost.
Deer Lodge.....	350	\$620,500 00
Beaver Head.....	54	100,000 00
Meagher.....	111	375,000 00
Madison.....	94	93,600 00
Lewis & Clarke.....	128	2,203,500 00
Jefferson.....	30	34,000 00
Total.....	767	3,426,600 00

## COAL.

No new discoveries of coal have been made since last year's report. The Northern Pacific Railroad will cause the speedy development of some of these mines, and, no doubt, the discovery of other deposits along the line of the roadway.

## TIN.

No tin in large quantities has yet been discovered. Specimens are found all over the country, and many persons think that ultimately it will be found in paying quantities.

## SILVER.

The reduction of the silver ores is commanding the attention of the people more generally than heretofore, and the different reduction processes are meeting with better success than formerly.

These matters fully understood will cause a great impetus in the development of the argentiferous lodes which abound in number and wealth all over the country, and will increase the mineral resources of the Territory many millions of dollars annually.

## GOLD.

The production of this precious metal steadily maintains itself. The yield was reported by my predecessor, the lamented H. D. Washburn, at \$12,000,000 last year. Although water has been scarce for mining purposes, I am convinced, from the best data I can obtain, the yield will not fall short of that amount for the fiscal year ending June 30, 1871. The placer-mines, where water could be obtained, have been worked steadily, and have generally yielded good returns. Many of the old placers have been mostly exhausted or abandoned, or are now worked by Chinese; but new discoveries are constantly being made all over the country.

## QUARTZ.

The quartz mines are yielding well, especially those at Unionville, owned by the Columbia Company, the Whitlatch Union, and J. C. Ricker; also, those at Radersburgh, owned by Keating and Blacker, and Mr. C. Hendrie and William Clancy.

A new lode, lately discovered, called the General Washburn, promises rich returns. It is an extension of the Keating, which is the best paying quartz mine in the territory. There are ten quartz-mills in Lewis & Clarke County, constructed at a cost of \$257,000, with 30 batteries and 156 stamps. We have no report from any other counties.

For a more extended and elaborate report of the mineral resources of Montana, I would respectfully refer to the report of R. W. Raymond on the Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains, for 1870.

## PERMANENT SETTLEMENT.

The whole appropriations for surveys in this Territory for the last year were \$40,900. There have been 196 pre-emptions, paying to the Treasury of the United States \$39,300 and also 309 homesteads, of almost equal value to the Government. Settlements seem to be made in good faith, and are permanent. The farmers are stocking their farms with the best breeds of cattle and horses and the latest improved agricultural implements. The country now is self-sustaining, and presents ample room for millions of settlers of all occupations, who are cordially invited to come and make their homes with us, and grow up in wealth and usefulness, as the country expands its latent productions and power.

Very respectfully, your obedient servant,

JOHN E. BLAINE,  
*Surveyor General of Montana.*

HON. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*

A.—Statement of condition of appropriation for surveys of public lands in Montana for fiscal year ending June 30, 1871.

Dr.

No. of con't.	Date of ac- count.		
24	Sept. 6, 1870	To Benjamin F. Marsh and W. Y. Smith .....	\$2,602 04
24	Sept. 29, 1870	..... do .....	2,849 25
24	Oct. 7, 1870	..... do .....	744 82
24	Oct. 19, 1870	..... do .....	1,129 20
25	Oct. 7, 1870	To W. W. Johnson and W. H. Baker .....	788 94
27	Oct. 10, 1870	To Daniel L. Griffith .....	364 62
27	Oct. 22, 1870	..... do .....	1,501 29
26	Oct. 31, 1870	To William T. McFarland and S. Nebeder .....	2,024 89
25	Oct. 31, 1870	To W. W. Johnson and W. H. Baker .....	1,811 51
24	Nov. 2, 1870	To Benjamin F. Marsh and W. Y. Smith .....	629 11
29	Nov. 4, 1870	To David E. Folsom .....	2,118 86
24	Nov. 9, 1870	To Benjamin F. Marsh and W. Y. Smith .....	1,344 47
24	Dec. 3, 1870	..... do .....	663 45
31	Dec. 17, 1870	..... do .....	1,489 21
30	Dec. 17, 1870	To Johnson & Baker .....	1,100 87
28	Dec. 24, 1870	To John L. Corbett .....	2,173 40
26	Jan. 2, 1871	To McFarland & Nebeker .....	1,544 28
26	Jan. 2, 1871	..... do .....	2,504 55
26	Jan. 14, 1871	..... do .....	2,537 97
26	June 30, 1870	To balance .....	223 14
			30,145 87

## A.—Statement of condition of appropriation for surveys, &amp;c.—Continued.

CR.

July 15, 1870	By appropriation .....	\$30,000 00
Feb. 21, 1870	By disallowance of Marsh & Smith's account.....	7 50
Mar. 17, 1870	By disallowance of McFarland & Nebeker's account.....	138 37
		<hr/> 30,145 87

JOHN E. BLAINE,  
Surveyor General of Montana.

## B.—Statement showing the amount of deposits made for field and office work and publication of notice, under act of Congress, July 26, 1866, for the fiscal year ending June 30, 1871.

Office-work, amount of deposit made during the year.....	\$175 00
Field-work, amount of deposit made during the year.....	50 00
Publication of notice, amount of deposit made during the year.....	0 00

JOHN E. BLAINE,  
Surveyor General of Montana.



C.—A list of lands surveyed in Montana Territory for the fiscal year ending June 30, 1871.

No. of townships surveyed.	Township.	Range.	Public land.	A.	B.	C.	Total.
				Military reservation.	Unsurveyed mountain land.	Unsurveyed public land.	
			<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
1	7 south	8 west	22,909.23				22,909.23
2	8 south	8 west	22,947.48				22,947.48
3	6 south	7 west	23,054.54				23,054.54
4	6 south	8 west	22,988.10				22,988.10
5	7 south	7 west	22,887.04				22,887.04
6	5 south	7 west	23,034.95				23,034.95
7	10 south	6 west	23,064.94				23,064.94
8	13 north	19 west	19,844.83	3,185.17			23,030.00
9	10 south	7 west	10,026.98	13,013.02			23,040.00
10	3 south	5 west	12,252.23	10,697.32			22,949.60
11	9 south	8 west	15,632.66	7,309.74			22,942.40
12	11 north	4 west	22,987.01				22,987.01
13	8 north	3 west	23,787.11				23,787.11
14	5 north	3 west	22,898.87				22,898.87
15	5 north	4 west	14,148.07	8,899.61			23,047.68
16	6 north	4 west	23,099.00				23,099.00
17	12 north	20 west	10,663.30	12,376.70			23,040.00
18	13 north	20 west	16,198.64	6,612.00			23,010.64
19	14 north	20 west	21,451.02	1,507.38			22,958.40
20	14 north	21 west	7,474.04	15,548.68			23,022.72
21	2 south	5 west	20,193.52	2,742.80			22,936.32
22	19 north	5 west	23,064.04				23,064.04
23	9 north	5 east	23,031.86				23,031.86
24	1 north	4 west	22,947.41				22,947.41
25	1 south	4 west	3,274.44	19,310.28			22,584.72
26	1 south	5 west	22,703.00				22,703.00
27	1 south	6 east	7,573.48	14,110.09			21,683.57
28	9 south	7 west	15,720.33	7,269.20			22,989.53
29	2 south	4 west	712.18	22,168.22			22,880.40
30	8 north	10 west	20,301.78	2,738.22			23,040.00
31	9 north	10 west	23,005.64				23,005.64
32	6 south	4 west	22,924.75				22,924.75
33	5 south	4 west	23,077.01				23,077.01
34	6 south	3 west	22,936.37				22,936.37
35	1 south	2 west	23,103.19				23,103.19
36	2 south	2 west	21,361.18	556.50			22,947.68
37	1 north	3 west	20,876.45	1,120.00			21,996.45
38	3 north	1 west	22,858.79				22,858.79
39	4 north	1 west	22,557.22				22,557.22
40	4 north	3 west	14,680.97	7,887.50			22,578.47
41	3 north	3 west	13,366.78	9,783.62			23,150.40
42	2 north	2 west	21,050.83	1,911.89			22,962.72
43	2 north	3 west	18,071.42	5,113.78			23,185.20
44	3 north	2 west	16,228.77	6,751.60			22,980.37
45	7 south	9 west	22,810.93				22,810.93
46	8 south	9 west	22,923.83				22,923.83
Total			873,716.26	180,643.32			1,054,359.58

JOHN E. BLAINE,  
Surveyor General of Montana.

D.—*Statement showing condition of surveys contracted by United States surveyor general of Montana, under appropriation by Congress, for the fiscal year ending June 30, 1871.*

Contract.		Character and location of work.	Names of deputies.
No.	Date.		
*24	1870. July 5 ....	Extension of the second standard parallel south, through ranges 5, 6, 7, 8, and 9 west; a guide meridian north from the second to the first standard parallel south, between ranges 8 and 9 west; the subdivision of township 1 north, range 4 west; the exterior boundaries and subdivision lines of township 1 south, range 4 west; townships 1, 2, and 3 south, range 5 west; township 8 south, range 6 west; townships 5, 6, 7, and 8 south, range 7 west, and townships 6, 7, and 8 south, range 8 west, of principal meridian, and an extension of the first standard parallel south, through range 8 west, of the principal meridian.	Benjamin F. Marsh and William Y. Smith.
25	July 29 ...	The Bitter Root guide meridian north, between ranges 19 and 20 west, through townships 13 and 14 north; exterior and subdivisional lines of township 13 north, range 19 west; exterior and subdivisional lines of townships 12, 13, and 14 north, range 20 west; exterior and subdivisional lines of township 14 north, range 21 west, principal meridian.	Walter W. Johnson and William H. Baker.
†26	July 30 ...	Exterior lines of townships 1, 2, 3, and 4 north, range 1 west; subdivision lines of townships 3 and 4 north, range 1 west; exterior lines of townships 1, 2, 3, and 4 north, range 2 west; subdivision lines of townships 2 and 3 north, range 2 west; exterior lines of townships 1, 2, 3, and 4 north, range 3 west; subdivision lines of townships 1, 2, 3, and 4 north, range 3 west; exterior and subdivision lines of townships 5 and 6 north, range 3 west; exterior and subdivisional lines of townships 5 and 6 north, range 4 west; exterior and subdivision lines of townships 1 and 2 south, range 2 west, of principal meridian.	Wm. T. McFarland and Seymour Nebeker.
27	July 30 ...	A guide meridian north, between townships 3 and 4 west, from the first standard parallel north to the second standard parallel north; exterior lines of townships 7 and 8 north, range 3 west; subdivisional lines of township 8 north, range 3 west; the exterior and subdivisional lines of township 11 north, range 4 west, principal meridian.	Daniel L. Griffith.
28	August 6..	Exterior boundaries of township 6 south, ranges 2, 3, and 4 west; subdivision lines of township 6 south, range 3 west; townships 5 and 6 south, range 4 west, principal meridian.	John L. Corbett.
29	August 8..	The extension of the second standard parallel north, through ranges 4, 5, and 6 east; a guide meridian north from the second standard north to the third standard parallel north, between ranges 4 and 5 east; exterior and subdivisional lines of townships 9 and 10 north, range 5 east, principal meridian.	
30	Oct. 22 ....	The subdivision of township 9 north, range 10 west, and of township 8 north, range 10 west, principal meridian.	Walter W. Johnson and William H. Baker.
31	Nov. 2 ....	The exterior boundaries and subdivision lines of township 9 south, range 7 west; townships 7 and 8 south, range 9 west; township 2 south, range 4 west; township 1 south, range 6 east, principal meridian.	Benjamin F. Marsh and William Y. Smith.

\* Township 9 south, ranges 7 and 8 west, and township 10 south, ranges 6 and 7 west, were substituted in lieu of township 8 south, ranges 7 and 8 west. (Commissioner's letter of September 5, 1870.) Township 9 south, range 7 west, was not surveyed. (See letter from this office of November 2, 1870.)

† Township 6 south, range 3 west, was not surveyed. (See letter from this office of May 18, 1871.)

JOHN E. BLAINE,  
*Surveyor General of Montana.*

E.—Statement showing condition of contracts made for survey of mineral lands in Montana under act of Congress July 26, 1866, for the fiscal year ending June 30, 1871.

No.	Date.	Contract.	Name of deputy.	No. of district.	Extent of district.	No. of final surveys made.
4	Feb. 18, 1868		George F. Foote.....	2	Counties of Lewis and Clarke, Jefferson, Meagher, Choteau, Deer Lodge, and Missoula.	6
6	Mar. 18, 1868		John L. Corbett.....	1	Big Horn, Gallatin, Madison, and Beaver Head.	1

JOHN E. BLAINE,  
Surveyor General of Montana.

F.—Statement showing description of lands for which township plats and descriptive lists have been furnished the Helena land district, Helena, Montana, during the fiscal year ending June 30, 1871.

Township.	Range.	Area.	Triplicate plats, when transmitted.	Descriptive lists, when transmitted.
2 north.....	4 west.....	21,001.34	July 1, 1870.....	July 1, 1870.
6 south.....	1 west.....	22,888.62	August 3, 1870.....	August 3, 1870.
7 south.....	1 west.....	23,000.61	August 3, 1870.....	August 3, 1870.
8 south.....	1 east.....	12,036.06	August 3, 1870.....	August 3, 1870.
9 south.....	1 east.....	11,819.13	August 3, 1870.....	August 3, 1870.
7 south.....	8 west.....	22,909.23	September 8, 1870.....	September 8, 1870.
8 south.....	8 west.....	22,947.48	September 8, 1870.....	September 8, 1870.
6 south.....	7 west.....	23,054.54	October 8, 1870.....	October 8, 1870.
6 south.....	8 west.....	22,988.10	October 8, 1870.....	October 8, 1870.
7 south.....	7 west.....	22,887.04	October 8, 1870.....	October 8, 1870.
5 south.....	7 west.....	23,034.95	October 4, 1870.....	October 4, 1870.
10 south.....	6 west.....	23,064.94	October 6, 1870.....	October 6, 1870.
13 north.....	19 west.....	19,844.83	October 11, 1870.....	October 11, 1870.
10 south.....	7 west.....	10,026.98	October 21, 1870.....	October 21, 1870.
3 south.....	5 west.....	12,252.28	October 22, 1870.....	October 22, 1870.
9 south.....	8 west.....	15,632.66	October 22, 1870.....	October 22, 1870.
11 north.....	4 west.....	22,987.01	October 25, 1870.....	October 25, 1870.
8 north.....	3 west.....	23,757.11	November 1, 1870.....	November 1, 1870.
5 north.....	3 west.....	22,698.87	November 1, 1870.....	November 1, 1870.
5 north.....	4 west.....	14,148.07	November 1, 1870.....	November 1, 1870.
6 north.....	4 west.....	23,099.00	November 1, 1870.....	November 1, 1870.
12 north.....	20 west.....	10,663.30	November 1, 1870.....	November 1, 1870.
13 north.....	20 west.....	16,198.64	November 1, 1870.....	November 1, 1870.
14 north.....	20 west.....	21,451.02	November 1, 1870.....	November 1, 1870.
14 north.....	21 west.....	7,474.04	November 1, 1870.....	November 1, 1870.
2 south.....	5 west.....	20,193.52	November 3, 1870.....	November 3, 1870.
10 north.....	5 west.....	23,064.04	November 4, 1870.....	November 4, 1870.
9 north.....	5 east.....	22,031.86	November 5, 1870.....	November 5, 1870.
1 north.....	4 west.....	22,947.41	November 9, 1870.....	November 9, 1870.
1 south.....	4 west.....	3,274.44	November 9, 1870.....	November 9, 1870.
1 south.....	5 west.....	22,703.00	November 10, 1870.....	November 10, 1870.
1 south.....	6 east.....	7,873.48	December 3, 1870.....	December 3, 1870.
9 south.....	7 west.....	15,730.23	December 3, 1870.....	December 3, 1870.
2 south.....	4 west.....	712.18	December 17, 1870.....	December 17, 1870.
7 south.....	9 west.....	22,810.93	December 17, 1870.....	December 17, 1870.
8 south.....	9 west.....	22,923.83	December 17, 1870.....	December 17, 1870.
8 north.....	10 west.....	20,301.78	December 26, 1870.....	December 26, 1870.
9 north.....	10 west.....	23,005.64	December 26, 1870.....	December 26, 1870.
6 south.....	4 west.....	22,924.75	December 26, 1870.....	December 26, 1870.
5 south.....	4 west.....	23,077.01	December 26, 1870.....	December 26, 1870.
6 south.....	3 west.....	22,936.37	December 26, 1870.....	December 26, 1870.
1 south.....	2 west.....	23,103.19	December 30, 1870.....	December 30, 1870.
2 south.....	2 west.....	21,361.18	December 30, 1870.....	December 30, 1870.
1 north.....	3 west.....	20,876.45	January 4, 1871.....	January 4, 1871.
3 north.....	1 west.....	22,858.79	January 4, 1871.....	January 4, 1871.
4 north.....	1 west.....	22,557.22	January 4, 1871.....	January 4, 1871.
4 north.....	3 west.....	14,690.97	January 17, 1871.....	January 17, 1871.
3 north.....	3 west.....	13,366.78	January 17, 1871.....	January 17, 1871.
2 north.....	2 west.....	21,650.83	January 17, 1871.....	January 17, 1871.
2 north.....	3 west.....	18,071.42	January 17, 1871.....	January 17, 1871.
3 north.....	2 west.....	16,228.77	January 17, 1871.....	January 17, 1871.
Total.....		964,462.02		

JOHN E. BLAINE,  
Surveyor General of Montana.



G.—Statement showing the condition of the appropriation for the clerks in the office of the surveyor general of Montana for the fiscal year ending June 30, 1871.

DR.				CR.	
1870.				1870	
Oct. 1	To George F. Marsh, draughtsman	\$375 00	July 12	By appropriation.....	\$4,000 00
Oct. 1	To T. C. Bailey, chief clerk .....	450 00			
Oct. 1	To Seymour Nebeker, clerk .....	191 57			
Dec. 31	To T. C. Bailey, chief clerk .....	450 00			
Dec. 31	To George F. Marsh, draughtsman.	375 60			
Dec. 31	To Theodore Shed, clerk .....	375 60			
Dec. 31	To Edward C. Isaacs, clerk .....	187 50			
1871.					
March 31	To T. C. Bailey, chief clerk .....	450 00			
March 31	To Seymour Nebeker, draughtsman	375 00			
June 30	To T. C. Bailey, chief clerk .....	450 00			
June 30	To George F. Marsh, draughtsman.	317 31			
June 30	To balance .....	3 62			
		4,000 00			4,000 00

JOHN E. BLAINE,  
Surveyor General of Montana.

H.—Statement showing condition of appropriation for salary of surveyor general of Montana for fiscal year ending June 30, 1871.

DR.				CR.	
1870.				1870.	
Oct. 1	To H. D. Washburn .....	\$750 00	July 12	By appropriation.....	\$3 000 00
Dec. 31	To H. D. Washburn .....	750 00			
1871.					
Jan. 26	To Mrs. Washburn, administratrix.	216 67			
June 30	To John E. Blaine.....	750 00			
June 30	To balance .....	533 33			
		3,000 00			3,000 00

JOHN E. BLAINE,  
Surveyor General of Montana.

## I.—Statement showing condition of appropriation for incidental expenses for office of surveyor general of Montana for the fiscal year ending June 30, 1871.

Dr.

Cr.

1870.			1870.		
July 20	Benjamin D. Stone.....	\$2 31	April 20	By appropriation .....	\$900 00
July 20	Daniel C. Corbin.....	62 50	July 15	By appropriation .....	3,000 00
July 20	J. N. Ming & Co.....	65 82			
July 20	George Clinton.....	60 00			
July 20	H. D. Washburn.....	29 34			
Oct. 7	Blanchard & Mohun.....	7 00			
Oct. 1	D. W. Fisk.....	15 00			
Oct. 1	Benjamin D. Stone.....	150 00			
Oct. 1	W. T. McLeod & Co.....	11 00			
Oct. 1	Sanford & Briel.....	14 00			
Oct. 1	A. T. Allen.....	20 00			
Oct. 1	Daniel C. Corbin.....	69 98			
Oct. 1	S. H. Crounse.....	6 00			
Oct. 1	Tootle, Leach & Co.....	72 50			
Oct. 1	H. D. Washburn.....	70 90			
Oct. 1	J. H. Ming & Co.....	34 65			
Dec. 31	Benjamin D. Stone.....	150 00			
Dec. 31	J. H. Ming & Co.....	28 25			
Dec. 31	Stickney & Son.....	11 50			
Dec. 31	D. C. Corbin.....	100 00			
Dec. 31	Tootle, Leach & Co.....	9 25			
Dec. 31	W. W. De Lacy.....	5 00			
Dec. 31	S. H. Crounse.....	6 00			
Dec. 31	H. D. Washburn.....	44 07			
Dec. 31	— Singer.....	38 00			
Dec. 31	— Ewing.....	6 00			
1871.					
Mar. 31	T. C. Bailey.....	27 13			
Mar. 31	Benjamin D. Stone.....	150 00			
Mar. 31	D. C. Corbin.....	100 00			
Mar. 31	J. H. Ming & Co.....	53 75			
Mar. 31	Benj. Meben.....	12 00			
Mar. 31	S. H. Crounse.....	6 00			
Mar. 31	C. H. Ellis.....	13 00			
Mar. 31	Thomas Ewing.....	6 00			
June 30	D. C. Corbin.....	100 00			
June 30	Benjamin D. Stone.....	150 00			
June 30	S. H. Crounse.....	6 00			
June 30	E. Bassetto.....	72 00			
June 30	T. C. Bailey.....	13 40			
June 30	J. H. Ming & Co.....	57 70			
June 30	Parchen & Paynter.....	12 50			
June 30	C. H. Lewis.....	12 95			
June 30	Thomas Ewing.....	6 00			
June 30	C. H. Ellis & Bro.....	12 50			
June 30	M. R. Delay.....	173 00			
June 30	A. L. Bancroft & Co.....	40 00			
June 30	Balance.....	1,787 00			
Total.		3,900 00	Total.		3,900 00

JOHN E. BLAINE,  
Surveyor General of Montana.

## J.—Estimate for the surveying service in the district of Montana for the fiscal year ending June 30, 1873.

For surveying 42 townships, exteriors and subdivisions, as personally requested by settlers.....	\$32,000
For surveying extensions of meridians, standard parallels, exteriors and subdivisions, not estimated in the above.....	45,000
For rent of office, fuel, books, stationery, incidental expenses, and messenger..	3,000
For compensation of surveyor general .....	3,000
For compensation of clerks and draughtsman.....	6,000
	<u>\$89,000</u>

JOHN E. BLAINE,  
Surveyor General of Montana.

*J.—Report of the surveyor general of Idaho Territory.*

SURVEYOR GENERAL'S OFFICE,  
Boisé City, Idaho Territory, September 1, 1871.

SIR: In compliance with your instructions under date of April 7, 1871, I have the honor to submit my annual report, in duplicate, of the field and office work performed in this surveying district for the fiscal year ending June 30, 1871, together with the usual tabular statements relating thereto.

A. Estimate of expenses incidental to the survey of the public lands in Idaho for the fiscal year ending June 30, 1873.

B. Statement of expenditure of appropriation for compensation of surveyor general and clerks in his office for the fiscal year ending June 30, 1871.

C. Statement of incidental and office expenses for the fiscal year ending June 30, 1871.

D. Statement of the expenditure of the appropriation for the fiscal year ending June 30, 1871, and of the appropriation for surveying the Nez Perce Indian reservation.

E. Statement of original maps and copies transmitted to the General Land Office and to the district offices since the date of my last report.

F. Statement showing the condition of contracts entered into since June 30, 1870.

G. Statement of descriptive notes sent to local land offices since the date of my last report.

H. Tabular list of townships surveyed since the date of my last report, showing the areas of the public lands, Indian reservations, &c.

I. Statement of mineral claims surveyed under act of July 26, 1866.

K. Names, nativity, &c., of surveyor general and clerks for the fiscal year ending June 30, 1871.

The surveys of the past year have been the completion of the exterior lines of the Weiser Valley and subdivisions of the townships where there are settlers; the subdivisions of the mineral lands in the Owyhee district; the exterior and subdivision lines of the farming and grazing lands south of the base line, in the central portion of the Territory; and the exterior and subdivision lines of townships in the northern part, adjoining the Nez Perce Indian reservation; also the exterior lines and subdivisions of the Nez Perce Indian reservation to the extent of the appropriation for that purpose.

The surveys for the present year will be mostly confined to the subdivisions of the farming lands in the northern portion of the Territory and the grazing lands in the central portion.

As the grazing lands of the neighboring States are eaten out, the cattle are being driven to the extensive pasture lands of this Territory. Many thousand head have been driven into Idaho the past year, where both summer and winter ranges are excellent, and the raising of cattle highly profitable. Nearly all the settlers who arrived here three or four years ago in destitute circumstances are now prosperous, all owning more or less stock. The large yield of grain, and the expedition and economy of labor-saving agricultural implements, and remunerative prices, secure to the farmer satisfactory returns for his labor.

The yield of placer gold in Nez Perce, Shoshone, and Idaho counties, for the past fiscal year, averages the same as the previous year, about \$500,000 for each county.

The placer mines of the basin, in Boise County, have been more profitably worked, with a larger return than last year, owing to the quantity of snow that fell in the mountains during the winter. This district is still rich in placer gold, which has not been worked, owing to the small supply of water. New ditches will be dug, when the returns will be considerably increased.

In Lemhi County the yield continues about the same as last year. There are several fertile valleys in this county more or less settled. It is contemplated to extend the surveys to this part of the Territory the coming season.

Gold of fine quality is being taken from the banks of Snake River, where numbers of miners are now employed.

The mines of Line Creek and neighborhood are still being worked, although the quantity of gold obtained is small.

The silver mines of Alturas County are attracting the attention of foreign capitalists, and there are some assurances that this rich district will be developed before long. Owing to the want of capital but little work has been done.

The silver mines of Owyhee County are being worked with energy. New lodes have been discovered within the year, on which work is being prosecuted.

Congress appropriated, last session, an amount to survey the boundary between Idaho and Utah. When this line shall have been completed, the surveys will be extended to this part of the Territory, where there is a large settlement.

The exterior lines of Fort Hall Indian reservation should be surveyed, so that the lines of the public survey may close upon them. An appropriation should be made by Congress for this purpose.



## IDAHO COUNTY.

Idaho County is strictly a mountainous country. The principal branch of industry is mining. Warren, the county seat, is located near the center of the county. It is a prosperous mining camp. Placer gold was discovered here in 1863, and the mines have been profitably worked since then. Within the last three years gold in quartz has been discovered, and two mills have been erected, and several leads are being worked with energy and success.

The town of Florence, the oldest mining camp in the county, is located in Florence Basin, 2,000 feet below the summit of Florence Mountain, and is probably the highest town in the United States, being 11,100 feet above the sea. Gold was first discovered here in 1861, of fine quality, causing much excitement. The large number of miners who came in the spring of 1862 soon worked out the limited amount of the rich placers, but there is still gold enough found to employ from three to four hundred miners yearly. Several quartz-leads have been discovered in this basin, and one mill has been erected.

Considerable mining is done on the bars of Salmon River and its tributaries. This river lies very low in the mountains, and the climate is warmer in summer and winter than in any other portion of the Territory. The bottoms and bench lands are covered with bunch-grass, on which cattle and horses thrive throughout the winter without shelter. Numerous small farms have been cultivated on this river, mostly in garden vegetables to supply the mining camps.

There are no wagon-roads in this county. The mode of conveyance is by horse-back and pack-trains, over trails.

The Little Salmon and Big Payette Valleys are in the southern portion of the county. The latter lies south of the dividing ridge of the Salmon Mountains, on the head-waters of the Payette. This valley is eighty miles long north and south, and averages ten miles in width, surrounded by high mountains, and covered with fir, pine, and tamarack timber. The Payette River extends the whole length of the valley, with numerous mountain streams coursing through bottom lands to the river. This valley is one vast prairie covered with nutritious grasses and skirted by timber along the banks of the river and branches. The soil is a black sandy loam capable of producing the best of wheat, rye, barley, and oats. At the head of the valley is a beautiful mountain lake, nine miles long and three miles wide. The water is exceedingly clear. It is a place of much resort for fishing and hunting.

The Little Salmon Valley, or "Meadows," lies twenty-four miles west of the Payette Valley. The waters empty into the Salmon River. It is about one-third of the size of the Payette Valley and equally as beautiful and rich in pasturage and soil. Neither of these valleys is settled or surveyed.

## NEZ PERCÉ COUNTY.

The eastern portion of this county is mountainous and valuable for its gold mines and timber. The principal mining camps are Newsome Creek, Clearwater Station, and Elk City. They have been worked for the last ten years, and yield about \$500,000 annually. Camas Prairie lies in the central portion of the county, and directly east of the Nez Percé Indian reservation. It is fifteen miles wide east and west, and twenty miles long. It is surrounded by timber, and excels any other portion of the Territory for good farming land. Some sixty families are located on this prairie, and have good, improved farms. The Nez Percé Indian reservation embraces the middle portion of the western part of the county. This tract of land is high rolling prairie, with deep fertile valleys particularly adapted to farming and grazing, with timber and water in abundance.

West of this reservation and east of Snake River and Washington Territory is a belt of land well adapted to farming and grazing, about ten miles wide, and extending to the north line of the county.

North of the main Clearwater River and the Nez Percé reservation is a long belt of red-cedar timber. This timber covers a large tract of country, and is probably the finest growth of red cedar in the United States. Many of the trees are 200 feet high, and 10 and 15 feet in diameter. It is easily thrown into the Clearwater River and rafted down to Lewiston, and down the Snake and Columbia Rivers. Considerable lumbering is carried on in this way, and as the country settles, the lumber trade is rapidly increasing.

Lewiston, the county-seat, is located at the confluence of Clearwater and Snake Rivers. It is a thriving town of about eight hundred persons, and the only distributing point for all the merchandise for Northern Idaho.

## SHOSHONE COUNTY.

This county extends about one hundred miles north and south, and embraces all the northern portion of the Territory to the forty-ninth parallel of latitude. The portions

lying on the border of Washington Territory, and south of the Pend d'Oreille Lake, and on the Cœur D'Alene River, are prairies, and well adapted to farming, but are thinly settled. About one hundred families have settled on the Pelouse and Spokane Rivers, in the western portion of the county, during the past summer, and there is now considerable interest manifested in settling up these valuable farming lands. The interior of the southern portion of this county is mountainous and valuable only for its pasture and gold mines and timber. The principal mining camps are Pierce City, Bald Mountain, and Judson Creek. Pierce City is the county-seat. Gold was first discovered here in 1861, and the mines are still worked with good success.

The proportion of land in Northern Idaho, north of the Salmon River Mountains, is one-half farming and one-half mineral land. The farming lands are prairies, covered with the most luxurious growth of grasses, free from sage-brush and grease-wood, skirted with timber at suitable distances, and watered with rivers, creeks, and brooks from the mountain gullehes. The climate in the agricultural portion is warm in summer, with cool nights and little rain, and in winter will compare with the District of Columbia. The air is pure, and the climate healthy.

The Northern Pacific Railroad is now being surveyed from Lewiston up the Clearwater River toward the junction of the Bitter Root and Missoula Rivers. They are sticking the grading-pins and taking the slopes of the sides of the hills. In fact, they are making a permanent survey. In case this route is acceptable, one hundred miles of this survey is already accomplished. This portion of the Territory, which is by far the most desirable for agricultural and grazing purposes, is only partially surveyed. Heretofore, for want of a resident register, the land office, located at Lewiston, has never been opened. Within the last month, we understand that S. S. Slater, a resident of that place, has been appointed register, and the office opened for business. This has been the first opportunity to secure titles. These circumstances have tended to retard the settlement of this valuable portion of the country. Many people are seeking these lands, and are anxious to locate them in anticipation of the building of the Northern Pacific Railroad; but a strong objection meets every man at the outset: these lands have not been surveyed, and he knows not whether he will have to obtain his title from the railroad or the Government. If these lands were surveyed, and the railroad lands selected, it would add tenfold to this portion of the Territory.

I am, very respectfully, your obedient servant,

LA FAYETTE CARTÉE,  
*Surveyor General of Idaho.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office.*

*A.—Estimate of expenses incidental to the survey of the public lands in Idaho for the fiscal year ending June 30, 1873.*

OFFICE EXPENSES.

For salary of surveyor general.....	\$3,000 00
For salary of clerks .....	4,000 00
For rent of office, messenger, fuel, books, and other expenses.....	3,000 00
Total .....	10,000 00

SURVEYING SERVICE.

For surveying 200 miles standard lines, at \$15.....	\$3,000 00
For surveying 150 miles guide meridian, at \$15.....	2,250 00
For surveying 480 miles exterior boundaries, at \$12.....	5,760 00
For surveying 120 miles exterior boundaries, at \$15.....	1,800 00
For surveying 2,400 miles subdivisions, at \$10.....	24,000 00
For surveying 600 miles subdivisions, at \$12.....	7,200 00
	<hr/> 44,010 00
Grand total.....	<hr/> 54,010 00

B.—Statement of expenditure of appropriation for compensation of surveyor general and clerks in his office for the fiscal year ending June 30, 1871.

Dr.			Cr.		
1870.	To amount paid surveyor general and clerks, 3d quarter, 1870.	\$1,575 00	1870.	By appropriation approved July 12, 1870, as advised by letter from the Department of July 29, 1870.	\$7,000 00
	To amount paid surveyor general and clerks, 4th quarter, 1870.	1,705 56			
1871.	To amount paid surveyor general and clerks, 1st quarter, 1871.	1,575 00			
	To amount paid surveyor general and clerks, 2d quarter, 1871.	1,575 00			
	To balance.....	569 44			
		7,000 00			7,000 00
				By balance.....	569 44

C.—Statement of incidental and office expenses for the fiscal year ending June 30, 1871.

Dr.			Cr.		
1870.	To amount expended 3d quarter, 1870.	\$248 50	1870.	By appropriation approved July 15, 1870, as advised by letter from the Department of July 29, 1870.	\$2,900 00
	To amount expended 4th quarter, 1870.	285 34			
1871.	To amount expended 1st quarter, 1871.	299 57			
	To amount expended 2d quarter, 1871.	804 99			
	To balance.....	361 60			
		2,000 00			2,000 00
				By balance.....	361 60

D.—Statement of the expenditure of the appropriations for the fiscal year ending June 30, 1871

Dr.			Cr.		
1870.	To amount reported for payment on contract No. 18 to Darius F. Baker.	\$4,099 64	1870.	By balance.....	\$4,797 70
	Amount reported for payment on contract No. 19 to Peter W. Bell.	648 52	June 30	Appropriation approved July 15, 1870, as advised by letter from the Department of July 29, 1870.	30,000 00
	Amount reported for payment on contract No. 21 to Theodore W. Randall.	2,879 28	July 1		
	Amount reported for payment on contract No. 20 to Allen M. Thompson.	3,869 52			
	Amount reported for payment on contract No. 21 to Theodore W. Randall.	1,923 08			
	Amount reported for payment on contract No. 22 to Peter W. Bell.	4,093 40			
	Amount reported for payment on contract No. 17 to David P. Thompson.	334 50			
1871.	Amount reported for payment on contract No. 23 to John B. David.	5,225 73			
	Amount reported for payment on contract No. 17 to David P. Thompson.	119 68			
	Amount reported for payment on contract No. 24 to Allen M. Thompson.	1,308 61			
	Balance .....	295 74			
		24,797 70		Balance.....	295 74



## D—Continued.—Statement of the expenditure of the appropriation for surveying the Nez Percé Indian reservation.

Dr.					Cr.
1870.	To amount reported for payment on contract No. 17 to David P. Thompson.	\$13,909 62	1870.	By amount paid out of appropriation of June 30, 1861, (\$15,000.)	\$13,909 62

## E.—Statement of original maps and copies transmitted to the General Land Office and to the district offices since the date of my last report.

Descriptive plats.	Original.	General Land Office.	District office.	Total.	When transmitted to the General Land Office.	When transmitted to the district office.
Exterior lines of townships 14 and 15 north, through ranges 1, 2, and 3 west.	1	1	.....	2	July 23, 1870	
Township 13 north, range 3 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 14 north, range 1 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 14 north, range 2 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 14 north, range 3 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 15 north, range 1 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 15 north, range 2 west.	1	1	1	3	July 23, 1870	July 29, 1870
Township 15 north, range 3 west.	1	1	1	3	July 23, 1870	July 29, 1870
Exterior lines of townships 1, 2, 3, 4, and 5 south, through range 4 east.	1	1	.....	2	Aug. 29, 1870	
Exterior lines of townships 1, 2, 3, 4, and 5 south, through ranges 5 and 6 east, and of townships 1, 2, 3, 4, 5, and 6 south, through ranges 7 and 8 east.	1	1	.....	2	Oct. 23, 1870	
Second standard parallel north through ranges 1 and 2 east.	1	1	.....	2	Oct. 31, 1870	
Exterior lines of townships 9 and 10 north, range 1 east, and of townships 6, 7, 8, and 9 north, range 2 east.	1	1	.....	2	Oct. 31, 1870	
Township 10 north, range 1 east.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 7 north, range 2 east.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 12 north, range 1 west.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 12 north, range 2 west.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 13 north, range 1 west.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 13 north, range 2 west.	1	1	1	3	Oct. 31, 1870	Nov. 5, 1870
Township 1 south, range 5 east.	1	1	1	3	Nov. 23, 1870	Nov. 29, 1870
Township 2 south, range 6 east.	1	1	1	3	Nov. 23, 1870	Nov. 29, 1870
Township 5 south, range 6 east.	1	1	1	3	Nov. 23, 1870	Nov. 29, 1870
Exterior lines of township 1, 2, 3, and 4 south, ranges 3 and 4 west; townships 5 and 6 south, range 5 west, and of township 5 south, range 6 west.	1	1	.....	2	Dec. 21, 1870	
Township 5 south, range 3 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 5 south, range 4 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 6 south, range 2 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 6 south, range 3 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 6 south, range 4 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 6 south, range 5 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Township 6 south, range 6 west.	1	1	1	3	Dec. 21, 1870	Dec. 23, 1870
Exterior lines of townships 33, 35, and 36 north, range 4 west.	1	1	.....	2	Dec. 30, 1870	
Township 34 north, range 4 west.	1	1	1	3	Dec. 30, 1870	Dec. 30, 1870
Township 35 north, range 4 west.	1	1	1	3	Dec. 30, 1870	Dec. 30, 1870
Township 36 north, range 4 west.	1	1	1	3	Dec. 30, 1870	Dec. 30, 1870
Exterior lines of townships 37 and 38 north, ranges 3 and 4 west; township 33 north, range 4 west, and townships 33, 34, 35, 36, 37, and 38 north, range 5 west.	1	1	.....	2	Jan. 25, 1871	
Township 33 north, range 4 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 34 north, range 4 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 37 north, range 4 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 38 north, range 4 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 33 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 34 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 35 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 36 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 37 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 38 north, range 5 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 35 north, range 6 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Township 36 north, range 6 west.	1	1	1	3	Jan. 25, 1871	Jan. 25, 1871
Exterior lines of townships 33 and 34 north, range 4 west.	1	1	.....	2	Jan. 25, 1871	
Township 1 south, range 6 east.	1	1	1	3	May 11, 1871	May 16, 1871
Township 2 south, range 7 east.	1	1	1	3	May 11, 1871	May 16, 1871
Township 3 south, range 7 east.	1	1	1	3	May 11, 1871	May 16, 1871

E.—Statement of maps and copies transmitted to the General Land Office, &amp;c—Continued.

Descriptive plats.	Office.	General Land Office.	Commissioner Indian Affairs.	District office.	Total.	When transmitted to the General Land Office, and Commissioner Indian Affairs.	When transmitted to the district office.
Exterior boundaries of Nez Percé Indian reservation.	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 34 north, range 1 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 34 north, range 2 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 34 north, range 3 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 34 north, range 4 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 35 north, range 1 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 35 north, range 2 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 35 north, range 3 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 35 north, range 4 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 36 north, range 4 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870
Township 37 north, range 4 west.....	1	1	1	1	4	Dec. 30, 1870	Dec. 30, 1870

F.—Statement showing the condition of contracts entered into since June 30, 1870.

Number of contract.	Name of deputy.	Date of contract.	Character, amount, and locality of work.	Remarks.
19	Peter W. Bell.....	July 13, 1870	Exterior boundaries of townships 1, 2, 3, 4, and 5 south, range 4 east.....	Surveys completed and notes returned and approved, and plats and transcripts transmitted.
20	Allen M. Thompson .....	Aug. 12, 1870	Exterior lines of townships 9 and 10 north, range 1 east; township 10 north, range 2 east; townships 6, 7, 8, and 9 north, range 2 east; and the subdivision lines of parts of township 10 north, ranges 1 and 2 east, and townships 8 and 9 north, ranges 1 and 2 west, and the second standard parallel north and east forty-two miles.*	Surveys completed and notes returned and approved, and plats and transcripts transmitted.
21	Theophilus W. Randall.....	Aug. 20, 1870	Exterior lines of townships 1, 2, 3, 4, and 5 south, ranges 5 and 6 east; townships 1, 2, 3, 4, 5, and 6 south, ranges 7 and 8 east; and the subdivision lines of township 1 south, range 5 east, and of townships 2 and 5 south, range 6 east.	Surveys completed and notes returned and approved, and plats and transcripts transmitted.
22	Peter W. Bell.....	Aug. 20, 1870	Exterior lines of townships 1, 2, 3, and 4 south, ranges 3 and 4 west; townships 5 and 6 south, range 5 west; and the subdivision lines of townships 5 and 6 south, range 5 west.†	Surveys completed and notes returned and approved, and plats and transcripts transmitted.
23	John B. David.....	Aug. 13, 1870	Western boundaries of fractional townships 34 and 35 north, range 3 west; townships 34, 35, 36, 37, and 38 north, range 4 west; and exterior lines of townships 34, 35, 36, 37, and 38 north, range 5 west, and the subdivision lines of the same.	Surveys completed and notes returned and approved, and plats and transcripts transmitted.
24	Allen M. Thompson .....	Oct. 17, 1870	Subdivision lines of township 1 south, range 6 east, and townships 2 and 3 south, range 7 east.	Surveys completed and notes returned and approved, and plats and transcripts transmitted.

\* Township 7 north, range 2 east, and townships 12 and 13 north, ranges 1 and 2 west, substituted for township 10 north, range 2 east, and townships 8 and 9 north, ranges 1 and 2 west, and second standard parallel to close above.

† The subdivision lines of township 5 south, ranges 3 and 4 west, and township 6 south, ranges 2, 3, 4, 5, and 6 west, substituted for township 5 south, range 5 west.



G.—Statement of descriptive notes sent to local land offices since the date of last report.

Township.	Range.	Date when transmitted.	Township.	Range.	Date when transmitted.
13 north.....	3 west .....	June 26, 1871	36 north.....	4 west .....	June 26, 1871
14 north.....	1 west .....	June 26, 1871	33 north.....	4 west .....	June 26, 1871
14 north.....	2 west .....	June 26, 1871	34 north.....	4 west, I. R.....	June 26, 1871
14 north.....	3 west .....	June 26, 1871	37 north.....	4 west .....	June 26, 1871
15 north.....	1 west .....	June 26, 1871	38 north.....	4 west .....	June 26, 1871
15 north.....	2 west .....	June 26, 1871	33 north.....	5 west .....	June 26, 1871
15 north.....	3 west .....	June 26, 1871	34 north.....	5 west .....	June 26, 1871
10 north.....	1 east .....	June 26, 1871	36 north.....	5 west .....	June 26, 1871
7 north.....	2 east .....	June 26, 1871	37 north.....	5 west .....	June 26, 1871
12 north.....	1 west .....	June 26, 1871	38 north.....	5 west .....	June 26, 1871
12 north.....	2 west .....	June 26, 1871	35 north.....	6 west .....	June 26, 1871
13 north.....	1 west .....	June 26, 1871	36 north.....	6 west .....	June 26, 1871
13 north.....	2 west .....	June 26, 1871	1 south.....	6 east .....	June 26, 1871
1 south.....	5 east .....	June 26, 1871	2 south.....	7 east .....	June 26, 1871
2 south.....	6 east .....	June 26, 1871	3 south.....	7 east .....	June 26, 1871
5 south.....	6 east .....	June 26, 1871	34 north.....	1 west, I. R.....	June 26, 1871
5 south.....	3 west .....	June 25, 1871	34 north.....	2 west, I. R.....	June 26, 1871
5 south.....	4 west .....	June 26, 1871	34 north.....	3 west, I. R.....	June 26, 1871
6 south.....	2 west .....	June 26, 1871	35 north.....	1 west, I. R.....	June 26, 1871
6 south.....	3 west .....	June 26, 1871	35 north.....	2 west, I. R.....	June 26, 1871
6 south.....	4 west .....	June 26, 1871	35 north.....	3 west, I. R.....	June 26, 1871
6 south.....	5 west .....	June 26, 1871	35 north.....	4 west, I. R.....	June 26, 1871
6 south.....	6 west .....	June 26, 1871	36 north.....	4 west, I. R.....	June 26, 1871
34 north.....	4 west .....	June 26, 1871	37 north.....	4 west, I. R.....	June 26, 1871
35 north.....	4 west .....	June 26, 1871	35 north.....	5 west .....	June 26, 1871

H.—*Tabular list of townships surveyed since the date of my last report, showing the areas of the public lands, &c.*

Number of township surveyed.	Designation of townships.	Areas of public lands.	Areas of Indian reservation.
1	Township 13 north, range 3 west.....	22,848.37	.....
2	Township 14 north, range 1 west.....	23,014.44	.....
3	Township 14 north, range 2 west.....	23,022.28	.....
4	Township 14 north, range 3 west.....	16,004.74	.....
5	Township 15 north, range 1 west.....	22,990.01	.....
6	Township 15 north, range 2 west.....	642.06	.....
7	Township 15 north, range 3 west.....	12,797.98	.....
8	Township 10 north, range 1 east.....	8,477.15	.....
9	Township 7 north, range 2 east.....	5,760.00	.....
10	Township 12 north, range 1 west.....	23,001.36	.....
11	Township 12 north, range 2 west.....	22,897.29	.....
12	Township 13 north, range 1 west.....	23,001.10	.....
13	Township 13 north, range 2 west.....	22,875.32	.....
14	Township 5 south, range 3 west.....	23,203.82	.....
15	Township 5 south, range 4 west.....	3,841.10	.....
16	Township 6 south, range 2 west.....	5,767.56	.....
17	Township 6 south, range 3 west.....	23,072.07	.....
18	Township 6 south, range 4 west.....	23,106.79	.....
19	Township 6 south, range 5 west.....	23,070.90	.....
20	Township 6 south, range 6 west.....	7,855.33	.....
21	Township 1 south, range 5 east.....	22,843.61	.....
22	Township 2 south, range 6 east.....	23,154.09	.....
23	Township 5 south, range 6 east.....	22,190.26	.....
24	Township 34 north, range 4 west.....	8,738.87	.....
25	Township 35 north, range 4 west.....	5,947.02	.....
26	Township 36 north, range 4 west.....	1,039.28	.....
27	Township 33 north, range 4 west.....	2,921.64	.....
28	Township 37 north, range 4 west.....	12,778.09	.....
29	Township 38 north, range 4 west.....	23,107.01	.....
30	Township 33 north, range 5 west.....	3,622.45	.....
31	Township 34 north, range 5 west.....	15,372.42	.....
32	Township 35 north, range 5 west.....	23,020.20	.....
33	Township 36 north, range 5 west.....	23,083.97	.....
34	Township 37 north, range 5 west.....	21,976.17	.....
35	Township 38 north, range 5 west.....	23,059.71	.....
36	Township 35 north, range 6 west.....	3,640.62	.....
37	Township 36 north, range 6 west.....	248.55	.....
38	Township 1 south, range 6 east.....	22,832.91	.....
39	Township 2 south, range 7 east.....	3,842.10	.....
40	Township 3 south, range 7 east.....	23,066.29	.....
41	Township 34 north, range 1 west.....	.....	21,280.00
42	Township 34 north, range 2 west.....	.....	14,400.00
43	Township 34 north, range 3 west.....	.....	5,360.00
44	Township 34 north, range 4 west.....	.....	10,137.08
45	Township 35 north, range 1 west.....	.....	11,040.00
46	Township 35 north, range 2 west.....	.....	18,240.00
47	Township 35 north, range 3 west.....	.....	22,080.00
48	Township 35 north, range 4 west.....	.....	15,497.39
49	Township 36 north, range 4 west.....	.....	6,675.67
50	Township 37 north, range 4 west.....	.....	5,378.83
		620,734.93	130,088.97 620,734.93
			750,823.90 783,030.13
51	Townships previously reported.....		1,533,854.03
Total area.....			

I.—*Statement of mineral claim surveyed under act of July 26, 1866.*

Name of lode.	Number of survey.	County.	Remarks.
Monarch .....	37	Alturas .....	Survey incomplete.

K.—Names, nativity, &c., of surveyor general and clerks for the fiscal year ending June 30, 1871.

Names.	Occupation.	Nativity.	Whence appointed.	Time of service.	Amount paid.
La Fayette Cartee.	Surveyor general	New York .....	Idaho Territory.	Entire year.....	\$3,000 00
Wm. P. Thompson.	Chief clerk.....	New York .....	Idaho Territory.	Entire year.....	1,800 00
Daniel Cram.....	Draughtsman...	New Hampshire.	Idaho Territory.	Entire year.....	1,500 00
Auren G. Readway	Transcribing clk	New York .....	Idaho Territory.	Thirty-two days.	130 56

### K.—Report of the surveyor general of Utah Territory.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Salt Lake City, Utah, September 12, 1871.

SIR: I have the honor to submit in duplicate the annual report of the surveying service in this district for the fiscal year ending June 30, 1871, together with a map and exhibits from A to D, inclusive.

The surveys contracted for out of the appropriation of July 15, 1870, are completed, with the exception of those under contracts entered into with Julien Bausman and Joseph Gorkinski, for the extension of the lines along the Sevier River and over the lands within the grant to the Central Pacific Railroad Company, and that portion of Skull Valley lying north of the first standard parallel south.

In the former case the field-work having been completed before the expiration of the time to which the deputy was limited, and the delay in returning the field-notes being the result of illness, an extension of time was granted under the rules and regulations prescribed in such cases.

The work executed under contract of October 10, 1870, with A. D. Ferron, connects the line of the Union Pacific Railroad with the public surveys from the corner to sections 1, 2, 35, and 36, in townships 3 and 4 north, range 5 east, westward to its terminus, enabling the Department to adjust the out-boundaries of the grant, and placing the settlers in a series of beautiful valleys, in position to acquire title to their lands.

In the southern part of Utah, the towns of Marysvale, Circleville, and Paragoonah, with the surrounding settlements, are now embraced within the surveys, and the lines are established to the base of the mountains in the vicinity of the Sevier mines.

Under a special contract authorized by you, I have caused the out-boundaries of the San Pete and Spanish Fork, vacated Indian reservations, to be connected with the lines of the public surveys, the fractional lots of the public lands adjoining the same calculated, and the returns thereof made to the Department.

All of the settlements of importance from the northern to the southern boundary of the Territory, will be included within the surveys during the fiscal year upon which we have entered; and yet further appropriations will be required as new settlements are made and the mining interest expands.

Special deposits, amounting to \$1,255, have been made for the survey of mines, town-sites, and agricultural lands.

The final surveys have been approved in the cases of the Winamuck, Rollins, and Emma mining claims; and in other mines proceedings have been stayed in consequence of the filing of adverse claims.

In addition to the foregoing, it is gratifying to report that the present is a year of general prosperity.

The yield of the various crops is greater than it has been during any other season for the past four years, although the rainfall has been inconsiderable, and an unusual scarcity of water for irrigation has prevailed.

In the mines, which are now represented by thirty organized districts, extending nearly the entire length of the Territory, and over the Wahsatch, Oquirrh, Cedar, and other mountain ranges, the greatest activity is noticeable. Several thousand miners, attracted hither by the deserved reputation the mines so early acquired, by their energy and perseverance have demonstrated in one brief year that this Territory stands unrivaled in the richness and extent of argentiferous galena ores. The formation in which a majority of the mines are found is limestone.

The varieties of silver-bearing ore include almost all known to metallurgy, and contain from a trace of silver to \$27,000 per ton. The ores may be regarded as of a high grade compared with those of other States and Territories.

Twenty furnaces and two mills were erected this season, and have proved successful to a reasonable degree.

The yield of base bullion is estimated at forty tons per day, and the quantity of ore extracted awaiting treatment at 150,000 tons.



Mines containing auriferous as well as argentiferous ore are being worked in the Lincoln mining district in Southern Utah.

The yield of gold to date in the placer mines of Bingham Cañon is placed at \$1,200,000.

Cinnabar was discovered last spring in the Camp Floyd mining district; but the mines are not sufficiently developed to ascertain their value.

Heavy deposits of sulphur of remarkable purity exist near Cove Creek Fort, one hundred and seventy-five miles south of Salt Lake City. With railroad communication to that point, the 25,000 tons annually consumed in the United States may as well be supplied by Utah as by Sicily.

No mines of coal have been found as yet in this valley, although considerable prospecting is being done with favorable indications.

In the vicinity of Nephi three veins of coal were opened this year, and as it cokes well it will prove invaluable for smelting purposes.

The feasibility of the navigation of Great Salt Lake is demonstrated to the satisfaction of all. A steamer with a capacity of 200 tons, and accommodations for 100 passengers, is running between the town of Coriune, on Bear River, and the southern shore of the lake, transporting ore from the East Cañon mines, and furnishing that section with supplies.

Home capital and labor are now largely enlisted in the construction of railroads. The Utah Southern Railroad, a continuation of the Utah Central, and under the same management, was projected last spring. It is designed to complete it to Provo this season, and ultimately to St. George, near the Arizona border. Fourteen miles of the road are now opened for business.

The Utah Northern Railroad Company was organized on the 23d day of August last, for the purpose of constructing a road from a point on the Central Pacific Railroad, at or near Willard City, through Cache Valley to Soda Springs in Idaho. Grading is already commenced and the road will in all probability be completed by the 1st day of September, 1872.

The Territory has two hundred and seventy-five miles of railroad, telegraphic communication established between every settlement, a population of ninety thousand, mainly engaged in agricultural pursuits, a vast range and a climate admirably adapted to the raising of stock, and a manufacturing interest ranking in extent that of any other Territory in the Union.

Respectfully submitted.

C. C. CLEMENTS,  
*Surveyor General.*

HON. WILLIS DRUMMOND,  
*Commissioner of the General Land Office.*

*A.—Statement of surveys of public land completed during the fiscal year ending June 30, 1871.*

Deputy.	Contract.		Surveys.	Extent.	Cost.
	No.	Date.			
Joseph Gorlinski ..	6	Nov. 20, '69	Exterior boundaries of township 34 south, ranges 9 and 10 west; townships 33, 34, 35, 36, and 37 south, range 11 west; townships 36, 37, and 38 south, range 12 west; township 40 south, range 13 west; township 42 south, range 15 west; townships 42 and 43 south, range 16 west. Subdivision of township 34 south, range 9 west; townships 33, 34, and 35 south, range 10 west; townships 33, 34, 35, 36, and 37 south, range 11 west; townships 35, 36, 37, 38, and 39 south, range 12 west; townships 38, 39, 40, and 41 south, range 13 west; townships 41 and 42 south, range 14 west; townships 42 and 43 south, range 15 west; townships 42 and 43 south, range 16 west.	<i>M. ch. lk.</i> 95 47 34  490 65 85	\$1,147 10  4,908 23
Chas. L. Stevenson.	7	Apr. 6, '70	Canceled.		

Deputy.	Contract.		Surveys.	Extent.	Cost.
	No.	Date.			
Julien Bausman...	8	May 7, '70	Fifth standard parallel south..... Sixth standard parallel south..... Exterior boundaries of township 23 south, range 9 west; townships 24, 25, 26, 27, and 28 south, range 10 west; townships 28, 29, and 30 south, range 11 west; township 29 south, range 12 west. Subdivision of townships 24, 25, 26, 27, 28, and 29 south, range 10 west; townships 23, 29, and 30 south, range 11 west; township 29 south, range 12 west.	<i>M. ch. lk.</i> 8 00 00 48 00 00 90 00 31	\$120 00 720 00 1,080 04
Ferdinand Dickert.	9	June 18, '70	Exterior boundaries of townships 4 and 8 north, range 6 east; townships 7, 8, 9, 10, 11, and 12 north, range 7 east; townships 8, 9, 11, 12, and 13 north, range 8 east. Subdivision of townships 4, 7, and 8 north, range 6 east; townships 4, 7, 8, 9, 10, 11, and 12 north, range 7 east; townships 8, 9, 11, 12, and 13 north, range 8 east.	406 60 55 69 9 10	4,067 56 829 36
Aug. D. Ferron....	10	Aug. 30, '70	Resurvey of Salt Lake meridian..... Resurvey and survey of exterior boundary township 2 south, range 1 east. Resurvey and survey of subdivision lines of townships 2 and 3 south, range 1 east.	11 11 00 6 00 00 16 79 21	167 06 72 00 169 90
Aug. D. Ferron....	11	Oct. 10, '70	Exterior boundaries of township 5 north, range 1 west; townships 4 and 5 north, range 1 east; townships 3, 4, and 5 north, range 2 east; townships 3 and 4 north, range 3 east; townships 3 and 4 north, range 4 east; township 3 north, range 5 east. Subdivision of township 5 north, range 1 west; townships 4 and 5 north, range 1 east; townships 3, 4, and 5 north, range 2 east; townships 3 and 4 north, range 3 east; townships 3 and 4 north, range 4 east; township 3 north, range 5 east.	86 00 00 302 12 78	1,032 00 3,021 59
Julien Bausman...	12	Dec. 9, '70	Exterior lines of townships 16, 17, 18, 19, and 20 south, range 6 west; townships 17, 18, 19, and 20 south, range 7 west; townships 18, 19, and 20 south, range 8 west; townships 18 and 19 south, range 9 west. Subdivision lines of townships 16, 17, and 18 south, range 6 west; townships 17 and 18 south, range 7 west; townships 18, 19, and 20 south, range 8 west; townships 18 and 19 south, range 9 west.		
Joseph Gorlinski..	13	Jan. 11, '71	Surveys in progress; time extended. Sixth standard parallel south..... Exterior boundaries of townships 27, 28, 29, and 30 south, range 3 west; township 30 south, range 4 west; township 32 south, range 7 west; townships 31, 32, 33, and 34 south, range 8 west; townships 32, 33, and 34 south, range 9 west. Subdivision of townships 27, 28, 29, and 30 south, range 3 west; township 30 south, range 4 west; townships 31 and 32 south, range 7 west; townships 31, 32, 33, and 34 south, range 8 west; townships 32, 33, and 34 south, range 9 west; township 33 south, range 10 west.	20 00 00 75 00 00 485 72 15	300 00 900 00 4,869 77
Aug. D. Ferron....	14	Mar. 23, '71	Special contract for resurveys in township 8 south, range 1 east; townships 7 and 8 south, range 2 east; townships 18 and 20 south, range 1 east; townships 18, 19, and 20 south, range 1 west; township 18 south, range 2 east, to connect the out-boundaries of the Spanish Fork and San Pete vacated Indian reservations with the public surveys.		1,100 00

Deputy.	Contract.		Surveys.	Extent.	Cost.
	No.	Date.			
J. Feuson Smith...	15	May 9, '71	Exterior boundaries of townships 4, 5, and 6 south, range 2 east. Subdivision of townships 4, 5, and 6 south, range 2 east; township 6 south, range 3 east.	M. ch. lk. 3 44 00 20 00 61	\$42 00 200 07
M. T. Burgess .....	16	May 11, '71	Exterior boundaries of townships 24 and 25 south, range 6 west; township 24 south, range 7 west. Subdivision of townships 24 and 25 south, range 6 west; townships 24 and 25 south, range 7 west.	7 40 00 24 40 67 2,697 29 79	90 00 245 00 29,385 56

*B.—Statement of surveys in progress to be executed during the fiscal year ending June 30, 1872.*

Deputy.	Contract.		Surveys.	Remarks.
	No.	Date.		
Joseph Gorlinski ..	17	June 5, 1871	Guide meridian from corner to townships 5 and 6 south, ranges 8 and 9 west, north to township 14 north, inclusive. Principal base line from corner to townships 1 north and 1 south, on said guide meridian, east as far as practicable to the west shore of Great Salt Lake, and west to the confines of the desert. Exterior and subdivision lines of such townships east and west of said guide meridian, between first standard parallel south and principal base line, and north of said base line, as may be necessary to include the settlements and arable lands in the valleys south and west of Great Salt Lake and adjoining the line of the Central Pacific Railroad.	Surveys in progress.
Augustus D. Ferron	18	June 5, 1871	First standard parallel south from corner to townships 5 and 6 south, ranges 5 and 6 west, west to desert. Second standard parallel south from corner to townships 10 and 11 south, ranges 5 and 6 west, on first guide meridian east, to the mountains forming the east boundary of Tintie Valley, and west to the desert. Exterior and subdivision lines of townships between the first and second standard parallels south, and immediately south of the second standard parallel, to include the settlements and arable lands.	Surveys in progress.]
J. Feuson Smith ...	19	June 6, 1871	Exterior and subdivision lines of townships 6 and 7 north, range 1 west and ranges 1, 2, and 3 east.	Surveys in progress.
Ferdinand Dickert.	20	July 10, 1871	Exterior and subdivision lines of townships 2 and 3 south, ranges 2 and 3 east.	Surveys in progress.



## C.—Statement of deposits made by individuals for the survey of mines, agricultural lands, and town-sites during the fiscal year ending June 30, 1871.

Name of depositor.	Survey.	Field-work.	Office-work.	Total.
Daggett & Bristol .....	Winamuck Mine.....	\$40 00	\$25 00	\$65 00
John M. Moore .....	Rollins Mine.....	150 00	25 00	175 00
Walker Brothers.....	Prince of Wales Mine .....	120 00	20 00	140 00
Silas McGuire .....	Dixon Mine.....	100 00	25 00	125 00
Jonathan W. Green.....	Diamond City.....	125 00	25 00	150 00
Alvin W. Moore .....	Ophir City.....			200 00
C. G. Davidson .....	Townships 4, 5, and 6 south, range 2 east; township 6 south, range 3 east.			400 00
				1,255 00

## D.—Statement of amount of salaries paid surveyor general and clerks, for the fiscal year ending June 30, 1871; also incidental expenses for the same period.

Name.	Occupation.	Time of service.		Rate of salary.	Amount.
		From—	To—		
Courtland C. Clements.....	Surveyor general.....	June 30	June 30	\$3,000 00	\$3,000 00
Milton F. Clements .....	Chief clerk .....	June 30	June 30	1,800 00	1,800 00
Bernard A. M. Froiseth.....	Draughtsman .....	June 30	June 30	1,500 00	1,500 00
Sol. Levy .....	Clerk.....	Sept. 9	Dec. 5	1,400 00	334 78
John A. R. Hanson .....	Clerk.....	May 24	June 30	1,400 00	146 15
Total .....					6,780 93

## INCIDENTAL EXPENSES.

Expended during the first fiscal quarter.....	\$174 95
Expended during the second fiscal quarter.....	291 10
Expended during the third fiscal quarter.....	181 00
Expended during the fourth fiscal quarter.....	234 00
Total .....	881 05

## L.—Report of the surveyor general of Nevada.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Virginia City, Nevada, September 20, 1871.

SIR: In compliance with your instructions, I have the honor to submit the following report in duplicate of the operations of this office during the fiscal year ending June 30, 1871, with accompanying statements relative to the surveying department.

A.—Statement of contracts entered into by the United States surveyor general for Nevada, with the number of miles surveyed during the fiscal year 1870-'71.

B.—List of mineral claims surveyed in the State of Nevada during the fiscal year 1870-'71.

C.—List of lands surveyed in the State of Nevada during the fiscal year 1870-'71.

D.—Statement of plats made in the office of the United States surveyor general of Nevada during the fiscal year 1870-'71.

E.—Statement for the surveying service in the State of Nevada for the fiscal year ending June 30, 1873.

F.—Statement of special deposits with the sub-treasury of the United States for survey of mineral claims in Nevada during 1870-'71.

G.—Statement of account of appropriation for surveys of public lands in Nevada during the fiscal year 1870-'71.

H.—Statement of account of appropriation for compensation of the United States surveyor general of Nevada and the employes in his office during the fiscal year 1870-'71.

I.—Statement of account of appropriation for rent of office, fuel, books, stationery, and other incidental expenses, including pay of messenger in the office of the United States surveyor general of Nevada, during the fiscal year 1870-'71.

K.—Statement of account of appropriation for rent of office, fuel, books, stationery, and other incidental expenses, including pay of messenger in the office of the United States surveyor general of Nevada, during the fiscal year ending June 30, 1870, charged to deficiency appropriation.

L.—Statement of account of appropriation for survey of the eastern boundary of the State of Nevada during the fiscal year 1870-'71.

During the fiscal year ending June 30, 1871, as large an area of land on the line of the Central Pacific Railroad as was required to be surveyed for the present, in accordance with the instructions from your office has been surveyed. The balance of the appropriation has been expended in surveys in Pahranagat Valley, in the southeastern part of the State, and in Independence Valley, in the northeastern part, both of which sections are rapidly settling. The most important work performed in the State during the year was the

#### BOUNDARY SURVEY.

The survey of the boundary line between Nevada and the Territory of Utah, which was commenced October 1, 1870, and finished January 9, 1871, was of the highest importance. Along the line there were several settlements of Mormons, between the people of which and the officers of Lincoln County the question of jurisdiction was a prolific source of irritation. The discovery and rapid settlement of the rich mining district of Ely, which was claimed by the Mormons to belong to Utah, and by our citizens to be within the boundaries of Nevada, increased the evils of the situation. Conflicts of authority were frequent, and provoked unusual bitterness of feeling. It was a happy circumstance, indeed, that the boundary line had been determined shortly after the general election in Nevada in November, 1870, as it dispelled all doubt respecting the large vote of Ely mining district, which some had been inclined to maintain was under the jurisdiction of the Territory of Utah. Everybody accepted the declared result as legal. The good effects of the survey were immediate and palpable.

The adjustment of the boundary has largely increased the revenues of Lincoln County. The surveyor of that county, in his report for 1870, says that "the Mormon towns of Panaca City and Eagleville are catching the spirit of improvement, and miles of substantial fencing have been built around their farms in Meadow, Eagle, and Rose valleys." The valuable silver mines discovered in that section, several of which are already productive, have given an impetus to the settlement of nearly all the good land in the subjacent valleys; and in consequence of the calls for surveys in that part of the State, fully two-thirds of the appropriation for the present fiscal year will be expended there. The presence of rich mines of silver, and of large tracts of land well adapted to farming and grazing, combined with a salubrious climate, will render the line of the eastern boundary one of the most important parts of the State.

#### PATENTS TO MINES.

Since the passage by Congress of the mining law of 1866, which provides for the patenting of mining claims, the number of applications for and issues of patents at the land offices in Nevada are as follows: Carson District—number of applications for patents, 173; number of patents issued, 59. Austin District—number of applications, 124; number of patents issued, 48. Total applications, 297; total patents issued, 107.

#### MINING INDUSTRY.

The mining industry of Nevada, which is by far its most important resource, has materially improved since the date of my last annual report. Not only has the product of the great Comstock vein increased over that of the previous year, but the mines in the middle and eastern parts of the State have yielded more largely of silver than during any former year. Various causes have contributed to this result, among which may be mentioned the facilities afforded by the Central Pacific and the local railroads, the cheapening of mining expenses, the reduction of milling rates, and, what is of considerable consequence to the newer mining districts, the acquisition of foreign capital.

But not the least cause of this beneficent result is the improved condition of the mines on the Comstock. Within a short period the development of splendid bodies of valuable ore in the deeper workings of several mines has restored confidence in their general permanence, and established the belief that the long-continued barren interval is about to disappear in the great depths on the vein. Since the discovery of the Comstock vein, it is estimated that its mines have added upward of \$125,000,000 to the world's store of silver and gold. This has been achieved in the presence of extraordinary obstacles. The frightful waste which attended the operations of inexpe-

rienced managers, the general ignorance of metallurgical processes, the enormous expenses of administration, the great cost of labor, transportation, and supplies in the center of a wild mountain region, and the reckless spirit of stock-gambling, are among the evils which kept pace with the development of this matchless silver vein. But this state of affairs has happily passed away. High intelligence and skill, growing out of ten years' sharp experience, combined with a systematic economy, now generally govern the workings, and the superior facilities afforded by the local railroad enable the owners to utilize the vast bodies of ore of a low grade which had been rejected as worthless in former years.

During the last fiscal year the yield of the Comstock mines amounted to about \$10,000,000; and it is estimated that the product of the present year, in consequence of the rich bodies of ore developed at great depths, will be materially increased.

The Sutro tunnel, which is designed to drain the mines of the Comstock, and to facilitate their working, had, in August last, reached the length of 2,300 feet. This project is regarded of vital importance to the highest success of these productive mines.

Several new mining districts in Eastern Nevada are adding largely to the product of silver. The principal of these are Eureka, in Lander County, one hundred miles south of the Central Pacific Railroad; Mineral Hill, in Elko County, forty miles south of the Central Pacific, and Ely, in Lincoln County, on the eastern boundary of the State. The older districts of White Pine and Reese River, besides several districts in Humboldt County, are giving an increased yield. It is estimated that the product of silver in Nevada, outside of the Comstock region, exceeded \$7,000,000 during the last fiscal year. And the product of Central and Eastern Nevada will be greatly augmented in the current year. A few facts respecting the new districts named will be interesting.

Eureka contains extensive deposits of argentiferous lead ores, which were discovered and partially opened in 1869. In some cases the ore occurs in horizontal strata of limestone, but the most valuable workings consist of enormous deposits without ascertained depths or boundaries. The ore rarely outcrops, but very generally underlies a stratum of limestone a few feet thick. It is smelted with facility. One company—the Eureka Consolidated—produced from July 7, 1870, to July 1, 1871, 2,985 tons of bullion, of an assay value of \$400 per ton, and worth the aggregate sum of \$1,194,000.

The mines of Mineral Hill may be regarded as the richest in the State. During the last fiscal year a fair estimate of the product of this district, mainly from the mines of two companies, gives the value of \$750,000 in silver. Nearly the whole of this amount was reduced by one mill, of the capacity of fifteen stamps, in the short period of nine months. Recently a company of English capitalists bought that mill, and a group of the most productive mines, and is now erecting an additional mill of forty stamps.

The most prominent among the new districts is Ely, which abounds in valuable silver ores. Pioche, the chief town, has a population of 2,000. The ores produced by the principal mines in the district, from points not greatly below the surface, are beneficiated without the aid of fire; but as depth is attained the product is reported to be difficult to treat successfully without roasting, and for this purpose one company has just added the Stetefeldt chloridizing furnace—which has been eminently successful elsewhere—to its mill. During the last fiscal year, four mines yielded the following amount of silver:

Meadow Valley .....	\$1, 612, 900 52
Raymond and Ely .....	408, 723 92
Pioche .....	148, 000 00
No. Seven .....	125, 000 00
	<hr/>
	2, 294, 624 44
	<hr/>

When it is considered that these mines were worked under every disadvantage, in a wild region where mills and other facilities had to be gradually supplied, this splendid result will appear extraordinary.

#### MINERAL RESOURCES.

Besides the innumerable veins of silver and copper which occur in almost every part of the State, there are extensive deposits of salt, soda, sulphur, and borax. Salt is essential in beneficiating silver ores, and its presence in the neighborhood of reduction works is of inestimable value to the mining industry. The richest and most extensive deposit of borax in the United States exists in Nevada. One bed alone in Esmeralda County, in the southwestern part of the State, covers an area of 20,000 acres. This flat, or mud-lake, lies one hundred and forty miles south from the Central Pacific Railroad. An effort has already been made by a company to utilize these valuable borates, and add their product to the market.



## GRAZING AND STOCK-RAISING.

The hills and mountains of Nevada and many of the valleys abound in nutritious grasses, which will ultimately render the business of stock-raising only subordinate to that of mining the precious metals. The area devoted to grazing is extending annually, and the industry of raising stock is certain to become one of our marked sources of profit. Even now the prime quality of the beef and mutton, fattened on the sweet bunch-grasses of our mountains and foot-hills, is well known in the markets of California.

The periodical droughts which occur in the adjoining State of California send large droves of cattle and flocks of sheep into this State, where they are saved and fattened and returned to the markets of the coast. At the close of August, this year, it was estimated from credible data that 60,000 head of cattle and 100,000 sheep had been driven in from California, and before the close of October it is probable that the number of cattle will be swelled to 75,000 head, and the sheep to 150,000.

From June 30, 1870, to June 30, 1871, the Central Pacific Railroad delivered 8,874 head of beef cattle from Nevada to San Francisco; 2,500 were driven thence to the same market; making the ascertained total of 11,374 head of beef cattle during the year.

## AGRICULTURE.

As yet, comparatively slight attention has been devoted to the products of the farm and the dairy, although perhaps enough has been done, in both directions, to establish the fact that the wants of a largely increased population may be supplied. The surface of the State is very generally arid, and water for the garden and farm, and even for the stock "ranch," must be supplied by ditches and artesian wells, and by the construction of reservoirs for holding the water from the melting snows of the numerous mountain ranges.

Since the completion of ditches for irrigation, in Washoe County, on the eastern slope of the Sierra Nevada, considerable tracts of arid land, which were overgrown by sage-brush and grease-wood, have been cleared and planted with grass, grain, and roots. In every case where these warm, rich sage-brush lands have been irrigated they have returned generous crops. Alfalfa grass in particular thrives wonderfully. According to the report for 1870 of the surveyor of the county, the sage lands in Steamboat Valley produced that year, the second year after seeding, eight tons of Alfalfa hay to the acre; and he says he has heard of other lands which surpassed that yield. He adds that two and even three crops have been cut from the same land in one year.

Paradise Valley and Queen's River Valley, in Humboldt County, in the northwestern part of the State, are well watered by the Little Humboldt and Queen's Rivers, and their rich alluvial soil is very productive.

Ruby Valley, in the eastern part of the State, has a fair natural supply of water, and the soil is remarkably fertile. When the travel overland was performed in coaches, nearly all the hay and grain consumed over the route through a considerable part of the State were grown in this valley. The grain was of excellent quality and the yield per acre large. The valley still produces abundant crops of hay and grain and is noted for its fine stock.

The valleys of Nevada are treeless, the timber growing altogether in the mountain ranges. Scarcely any effort has yet been made to cultivate trees, either for fuel or fruit. In the adjoining Territory of Utah, where similar physical conditions exist, the hardier forest and fruit trees have been planted freely and thrive well; and there is no doubt that they would thrive equally well in Nevada. Small orchards have been set out in some localities, and the trees grow finely. At present the population is too deeply absorbed in mining and kindred pursuits to adopt any system for the planting of the much-needed trees.

## IRRIGATION.

The extreme aridity of the State renders the irrigation of the land essential. An efficient and cheap system—embracing the ditch, artesian well, and reservoir—could be easily adopted by means of which a large area of the land in the State might be profitably devoted to farming and grazing. Numerous ditches for the purpose of irrigation have been constructed in different parts of the State, and in every instance they have been entirely successful. The most extensive of these works are in Washoe Valley. Of the number the most important is the Truckee ditch, which receives its water from the Truckee River and distributes it along a course of eighteen miles. The estimated capacity of this ditch is 1,500 inches, miner's measurement, and cost about \$1,000 per mile. Besides this ditch, there are eighteen other ditches for irrigation in the same county. There are many others for a similar purpose in the different counties of the State.

## RAILROADS.

The Central Pacific Railroad, which traverses the State from west to east, has tended to the settlement of an extensive scope of country which was formerly almost in its normal condition. The great advantages of this line of communication are already felt materially. Towns and settlements dot its course; the mining districts which lie on either side are furnished with additional and cheaper facilities; and the path of the immigrant is clearer and more inviting. It enables the stock-raiser to speedily meet the demands of a distant market, and the miner to carry his ores to reduction works, or to sell them for foreign markets. And although the sanguine expectations of greatly-cheapened rates of transportation have not been realized, there is still a palpable improvement on the former condition of things.

Our adjuvant local railroads are of not less importance. The first section of the Virginia and Truckee Railroad—which will, when completed, connect the site of the great Comstock silver vein with the trans-continental highway—was commenced March 1, 1869, and finished November 15th, the same year. Its length, from Virginia City to Carson, the capital of the State, is twenty-one miles; its cost, \$1,626,000. The section from Carson to Reno—a prominent town on the Central Pacific Railroad—will be twenty-eight miles long, extending mainly through a fine valley; it will be completed early in 1872, at the estimated cost of \$1,000,000. The road from Virginia City to Reno will be forty-nine miles long, and its cost \$2,626,000. The road will be of immense importance to the mining and milling industry of the western part of the State. Since the completion of the first section between Virginia City and Carson, there have been carried over the road monthly an average of: Passengers, 2,000; cords of wood, 5,000; feet of lumber, 1,000,000; tons of ore, 12,000.

At present, all the supplies from San Francisco for this busy region are hauled in wagons from Reno to Virginia City, at great expense of time and money; but when the connection is made with the Central Pacific the entire carrying and passenger trade will be done by this local railroad, at a reduction of  $33\frac{1}{3}$  per cent. in the rates of freight.

A narrow-gauge road, to be known as the Eastern Nevada Railroad, has been projected between Elko, on the Central Pacific Railroad, and Hamilton, the chief town in the rich mining county of White Pine. The length of the road will be one hundred and twenty-four and a half miles; gauge, 3 feet; width of road-bed, 6 feet. The minimum grade of the road is 20 feet to the mile; the maximum, 120 feet. The road was surveyed March 1, 1871, and the grading was begun August 7, following. It will be completed in 1872. The projectors of the road estimate that passengers can be carried over it for \$10 per head; that freight from Elko to Hamilton will not exceed \$15 per ton, and the return freight from \$5 to \$8 per ton—a reduction of 200 per cent. on the present rates, to say nothing of the great gain in time. This local road will be of incalculable benefit not only to the mines of White Pine County, but to the important mining district of Eureka, adjoining, as well as to the valuable mineral region lying to the southward, in which is embraced the productive district of Ely.

Hoping that this report will meet your approbation, I am, very respectfully, your obedient servant,

E. S. DAVIS,  
*Surveyor General.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*





*40	Oct. 22	A. J. Hatch and J. H. Eaton	north, ranges 61 and 62 east, and township 10 north, ranges 37 and 58 east; Mount Diablo meridian. Seventh standard parallel line north. Through ranges 61 and 62 east. Exterior and subdivision lines of township 33 north, range 62 east; townships 34, 35, and 36 north, ranges 61 and 62 east; township 37 north, range 62 east; Mount Diablo meridian.	3, 750 00	.....	8 00 00	62 09 42 †39 49	268 08 17	13 40 92	3, 702 43	1870. Dec. 29
*41	Nov. 25	A. J. Hatch and J. H. Eaton	Ruby Valley guide meridian; townships 36, 37, and 38 north; eighth standard parallel line north through ranges 52, 53, 54, and 55 east; exterior and subdivision lines of townships 38, 39, 40, 41, 42, 43, and 44 north, ranges 54 and 55 east; townships 39, 40, and 41 north, ranges 51, 52, and 53 east; Mount Diablo meridian. First standard parallel line north from corner of townships 5 and 6 north, ranges 55 and 56 east, through ranges 56, 57, 58, 59, 60, 61, and 62 east; exteriors and subdivision lines of townships 6, 7, 8, 9, and 10 north, range 61 east; Mount Diablo meridian.	7, 500 00	18 00 00	20 00 00	144 40 90 †23 67	512 40 17 †61 49	.....	2, 307 69 5, 132 71	1871. Feb. 1 Mar. 4
*42	1871. Jan. 20	E. B. Monroe.....		5, 000 00	.....	36 00 00	83 75 58 †25 12	299 54 38 †71 06	.....	4, 556 79	Mar. 27
*43	Feb. 16	A. J. Hatch and J. H. Eaton	Exterior and subdivision lines of townships 34, 35, 36, 37, and 38 north, ranges 51 and 52 east; townships 42, 43, 44 and 45 north, ranges 51 and 52 east; townships 44 and 45 north, ranges 49 and 50 east; Mount Diablo meridian.	7, 000 00	.....	30 00 00	196 78 42	417 11 84	.....	2, 813 84 4, 171 48	Apr. 10 May 10
				41, 270 00	18 00 00	130 00 00	786 18 87	2, 829 61 85	15 45 95	40, 126 66	

\* Closed.

† Convergency.

‡ Special deposit.

B.—List of mineral claims in the State of Nevada during the fiscal year 1870-71.

Survey num-ber.	Name of company.	Location of claims.				Area in acres.	Date of ap- proval.	Date of trans- mittal.	Character of lode.
		Number of mining district.	Mining district.	County.	Township.				
51	Lady Washington.....	7	Gold Hill.....	Storey.....	Township 16 north, range 21 east..	5.59	July 25, 1870	July 25, 1870	Silver.
38	Mukwango.....	4	White Pine.....	White Pine.....	Unsurveyed.....	5.51	Aug. 18, 1870	Sept. 29, 1870	Do.
39	.....do.....	4	.....do.....	.....do.....	.....do.....	5.51	Aug. 18, 1870	Sept. 29, 1870	Do.
40	Aurora Consolidated.....	4	.....do.....	.....do.....	.....do.....	2.75	Aug. 23, 1870	Sept. 6, 1870	Do.
37	Battle Mountain Mining Company.....	5	Battle Mountain.....	Humboldt.....	Township 31 north, range 43 east..	3.56	Sept. 3, 1870	Sept. 6, 1870	Copper.
38	.....do.....	5	.....do.....	.....do.....	.....do.....	4.23	Sept. 3, 1870	Sept. 6, 1870	Do.
39	.....do.....	5	.....do.....	.....do.....	.....do.....	7.35	Sept. 3, 1870	Sept. 6, 1870	Do.
37	Isaac M. Baker.....	4	Reese River.....	Lander.....	Township 19 north, range 43 east..	4.60	Oct. 1, 1870	Oct. 14, 1870	Silver.
88	American Mining Company.....	4	.....do.....	.....do.....	Unsurveyed.....	12.90	Oct. 5, 1870	Oct. 14, 1870	Do.
89	A. R. Gaudin and B. B. Troxels.....	4	Anador.....	.....do.....	.....do.....	11.2	Oct. 20, 1870	Oct. 25, 1870	Do.
41	Eberhardt Mill and Mining Company.....	4	White Pine.....	White Pine.....	.....do.....	6.88	Oct. 24, 1870	Oct. 25, 1870	Do.
42	Aurora Consolidated.....	4	.....do.....	.....do.....	.....do.....	5.70	Dec. 5, 1870	Dec. 5, 1870	Do.
43	F. Drake, J. W. Crawford, E. R. Sprout, and E. Applegarth's.	4	.....do.....	.....do.....	.....do.....	8.60	Dec. 22, 1870	Dec. 29, 1870	Do.
37	Eureka Consolidated.....	4	Eureka.....	Lander.....	.....do.....	3.50	Jan. 10, 1871	Jan. 17, 1871	Do.
38	McKibben.....do.....	4	.....do.....	.....do.....	.....do.....	1.60	Jan. 10, 1871	Jan. 17, 1871	Do.
37	Bradshaw.....	7	Virginia.....	Storey.....	Township 17 north, range 21 east..	6.43	Feb. 5, 1871	Feb. 8, 1871	Do.
38	H. McClintock and others.....	4	White Pine.....	White Pine.....	Unsurveyed.....	4.50	Mar. 22, 1871	Mar. 23, 1871	Do.
39	.....do.....	4	.....do.....	.....do.....	.....do.....	5.31	May 20, 1871	May 29, 1871	Do.
44	Peter Brundow's.....	4	.....do.....	.....do.....	.....do.....	10.30	May 26, 1871	May 29, 1871	Do.
39	J. H. Alderson and J. B. Osborne's.....	4	Secret Cañon.....	Lander.....	.....do.....	11.20	June 8, 1871	June 19, 1871	Do.
40	Eureka Consolidated.....	4	Eureka.....	.....do.....	.....do.....	3.25	June 15, 1871	June 19, 1871	Do.
68	Crown Point.....	7	Gold Hill.....	Storey.....	Township 17 north, range 21 east..	8	June 30, 1871	July 26, 1871	Do.
69	Kentuck.....	7	.....do.....	.....do.....	.....do.....	2	June 30, 1871	July 26, 1871	Do.
70	Yellow Jacket.....	7	.....do.....	.....do.....	.....do.....	22	June 30, 1871	July 26, 1871	Do.
Total.....						165.70			

C.—List of lands surveyed in the State of Nevada during the fiscal year 1870-71.

Locality.	Town-ship.	Range.	Public land.	Mineral.	Unsurveyed.		Total.
					Barren.	Swamp.	
			Acres.	Acres.	Acres.	Acres.	Acres.
Pahranagat Valley .....	South.	East.					
	3	59		23, 052. 98			23, 052. 98
	4	59	19, 531. 04	3, 512. 50			23, 073. 54
	4	60	23, 037. 16				23, 037. 16
	5	60	22, 400. 61				22, 400. 61
	6	60	11, 523. 90		11, 476. 16		22, 997. 66
	6	61	11, 479. 74		11, 525. 52		23, 035. 26
	8	62	1, 765. 14		21, 120. 00	*157. 26	23, 042. 40
Smoke Valley .....	North.						
	31	17	2, 478. 70		2, 474. 40		4, 953. 10
	31	18	7, 679. 89		15, 360. 48		23, 040. 37
	32	17	3, 315. 35		1, 652. 80		4, 968. 15
	32	18	5, 732. 66		17, 274. 30		23, 006. 96
	37	61	6, 889. 25		16, 146. 56		23, 035. 81
	38	60	1, 200. 00		21, 859. 20		23, 059. 20
	38	61	23, 066. 44				23, 066. 44
Humboldt and Goose Creek Valleys.	38	62	9, 274. 24		13, 743. 80		23, 023. 04
	39	63	13, 298. 50		9, 613. 24		22, 911. 74
	40	64	10, 542. 12		12, 397. 40		22, 939. 52
	40	65	13, 980. 67		8, 982. 31		22, 962. 98
	41	64	17, 835. 09		5, 208. 88		23, 043. 97
	41	65	23, 044. 53				23, 044. 53
	42	65	13, 757. 58		9, 272. 60		23, 030. 18
	33	62	21, 279. 21			†1, 696. 36	22, 975. 57
	34	61	4, 643. 66		18, 305. 74		22, 949. 40
	34	62	17, 994. 54			†4, 946. 27	22, 940. 81
Clover Valley .....	35	61	5, 755. 58		17, 195. 96		22, 951. 54
	35	62	22, 945. 31				22, 945. 31
	36	61	2, 883. 00		20, 113. 44		22, 993. 44
	36	62	10, 315. 80		12, 708. 10		23, 023. 90
	37	62	14, 970. 95		8, 414. 40		23, 385. 35
	10	57	22, 899. 64				22, 899. 64
	10	58	9, 510. 62		13, 436. 80		22, 947. 42
	11	56	11, 514. 24		11, 578. 72		23, 092. 96
Duck Water Valley .....	12	56	23, 130. 66				23, 130. 66
	13	56	23, 082. 83				23, 082. 88
	14	56	7, 677. 92		15, 274. 40		23, 052. 32
	11	61	18, 888. 83	4, 171. 42			23, 060. 25
	11	62	16, 485. 88	1, 920. 82	4, 640. 00		23, 046. 70
	12	61	13, 427. 00		9, 609. 60		23, 036. 60
	12	62	20, 255. 01	2, 779. 72			23, 034. 73
	13	61	1, 914. 58		21, 078. 80		22, 993. 38
Washoe Valley .....	17	19	646. 74				646. 74
Independence Valley .....	39	51	12, 235. 96	1, 842. 80	8, 849. 02		22, 928. 68
	39	52	6, 025. 73		16, 920. 96		22, 946. 69
	40	51	1, 120. 00	1, 680. 00	20, 090. 08		22, 890. 08
	40	52	21, 456. 44		1, 476. 79		22, 933. 23
	41	52	18, 160. 00		4, 860. 80		23, 020. 80
	38	55	15, 303. 14		7, 683. 52		22, 986. 66
	39	54	19, 609. 94		3, 353. 88		22, 963. 82
	39	55	11, 896. 67		11, 035. 20		22, 931. 87
Valley of the North Fork of Humboldt River.	40	54	14, 730. 98		8, 198. 68		22, 929. 66
	40	55	10, 106. 43		12, 790. 72		22, 897. 15
	41	54	16, 787. 30		6, 220. 28		23, 007. 58
	41	55	6, 310. 30		16, 730. 40		23, 040. 70
	42	54	13, 909. 10		9, 068. 76		22, 977. 86
	43	54	6, 560. 00		16, 404. 16		22, 964. 16
	43	55	7, 288. 28		15, 687. 54		22, 975. 82
	44	55	2, 960. 00		19, 989. 28		22, 949. 28
	6	61	22, 393. 92	639. 22			23, 033. 14
	7	61	23, 000. 94				23, 000. 94
	8	61	22, 989. 77				22, 989. 77
	9	61	22, 923. 91				22, 923. 91
Diamond and Pine Valleys.	10	61	22, 919. 89				22, 919. 89
	25	53	9, 381. 14		13, 468. 00		22, 849. 14
	26	52	10, 885. 46	1, 921. 58	10, 217. 12		23, 024. 16
	26	53	11, 201. 18		11, 859. 48		23, 060. 66
Maggie Creek .....	27	52	15, 910. 37		6, 081. 56		22, 991. 93
	34	51	18, 200. 01		4, 758. 52		22, 958. 53
	35	51	20, 060. 22		3, 054. 47		23, 114. 69
	35	52	3, 588. 63		19, 395. 32		22, 983. 95
	36	51	10, 915. 68		12, 096. 96		23, 012. 64
	36	52	8, 003. 90		15, 036. 08		23, 039. 98
Bull Run .....	37	52	21, 759. 00		1, 276. 04		23, 035. 04
	48	51	17, 785. 57		5, 200. 00		22, 985. 67
	43	52	964. 40	4, 640. 00	17, 370. 56		22, 974. 96
	44	51	22, 945. 54				22, 945. 54
	44	52	3, 403. 11	19, 499. 75			22, 902. 86
Totals .....			986, 671. 67	65, 700. 79	629, 743. 69	6, 799. 89	1, 688, 916. 04

\* Pahranagat Lake.

† Snow-Water Lake.



*D.—Statement of plats made in the office of the United States surveyor general of Nevada, for the fiscal year 1870-71.*

Description.	Original.	Department.	Register.	Sketches for deputies.	Total.
Plats of eastern boundary of Nevada.....	8	5	-----	-----	13
Plats of exterior township lines.....	Tracings. 10	5	-----	-----	5
Plats of townships subdivided.....	75	10	-----	-----	20
Plats of mineral claims.....	25	75	79	-----	229
Tracings of township plats for Washington.....	1	25	25	-----	75
Sketches for deputies.....	-----	3	-----	-----	4
Transcript map of State of Nevada, (tracings).....	1	-----	-----	6	6
Transcript map of mining districts, (tracings).....	2	1	-----	-----	2
Total.....	-----	5	-----	-----	7
					369

*E.—Statement for the surveying service in the district of Nevada for the fiscal year ending June 30, 1873.*

For surveying thirty-five hundred miles of sub-division lines, one thousand miles of township lines, and five hundred miles of standard lines in the southern and western parts of the State.....	\$54,500 00
For compensation of surveyor general.....	3,000 00
For compensation of two clerks and two draughtsmen.....	6,300 00
Rent of office, stationery, and incidental expenses, including salary of messenger.....	4,200 00

*F.—List of special deposits with the sub-treasury of the United States for mineral claims in Nevada, during 1870-71.*

Survey No.	Name.	District.	Deputy.	Amount.	Remarks.
51	Lady Washington.....	7	J. E. James.	\$75 00	Closed.
38	Mukwanago.....	4	T. J. Read.	90 00	Do.
39	do.....	4	do.....	90 00	Do.
40	Aurora Consolidated.....	4	do.....	100 00	Do.
37	Battle Mountain.....	5	A. J. Hatch.	70 00	Do.
38	do.....	5	do.....	70 00	Do.
39	do.....	5	do.....	70 00	Do.
37	J. M. Baker.....	4	T. J. Read.	70 00	Do.
88	American Company.....	4	do.....	70 00	Do.
89	A. R. Gandolfo, B. B. Troxel.....	4	do.....	70 00	Do.
41	Eberhardt.....	4	do.....	100 00	Do.
42	Aurora Consolidated.....	4	do.....	100 00	Do.
43	F. Drake and others.....	4	do.....	100 00	Do.
37	Eureka Consolidated.....	4	do.....	100 00	Do.
38	do.....	4	do.....	100 00	Do.
67	McKibben.....	7	J. E. James.	75 00	Do.
38	H. McClintock and others.....	4	T. J. Read.	80 00	Do.
39	do.....	4	do.....	80 00	Do.
44	Peter Brandow's.....	4	do.....	90 00	
39	J. H. Alderson and J. B. Osborne's.....	4	do.....	100 00	
40	Eureka Consolidated.....	4	do.....	80 00	
68	Crown Point.....	7	J. E. James.	75 00	
69	Kentuck.....	7	do.....	75 00	
70	Yellow Jacket.....	7	do.....	75 00	
37	Bradshaw.....	3	T. J. Read.	100 00	Do.

*G.—Statement of account of appropriation for surveys of public lands in Nevada during the fiscal year 1870-71.*

Dr.			Cr.
Amount paid quarter ending September 30, 1870.	\$1,507 04	Balance of appropriation of March 3, 1869, (\$40,000.) as per letter of August 4, 1870.	\$1,507 04
Amount paid quarter ending December 31, 1870.	15,849 76	Appropriation of July 15, 1870, as per letter of August 1, 1870.	40,625 00
Amount paid quarter ending March 31, 1871.	17,253 32		
Amount paid quarter ending June 30, 1871.	6,985 32		
By balance.....	41,595 44		
	536 60		
	42,132 04		42,132 04

H.—*Statement of account of appropriation for compensation of the United States surveyor general, and the employes in his office, during the fiscal year 1870-71.*

DR.		CR.	
Amount paid quarter ending September 30, 1870.	\$1,950 00	By appropriation of July 12, 1870.....	\$7,000 00
Amount paid quarter ending December 31, 1870.	1,950 00		
Amount paid quarter ending March 31, 1871.	1,575 00		
Amount paid quarter ending June 30, 1870.	1,520 60		
	6,995 60		
By balance.....	4 40		
	7,000 00		7,000 00

I.—*Statement of account of appropriation for rent of office, fuel, books, stationery, and other incidental expenses, including pay of messenger, during the fiscal year 1870-71.*

DR.		CR.	
Amount paid quarter ending September 30, 1870.	\$400 00	By appropriation of July 15, 1870.....	\$4,000 00
Amount paid quarter ending December 31, 1870.	583 10		
Amount paid quarter ending March 31, 1871.	518 00		
Amount paid quarter ending June 30, 1871.	1,012 46		
	2,513 56		
By balance.....	1,486 44		
	4,000 00		4,000 00

K.—*Statement of account of appropriation for rent of office, fuel, books, stationery, and other incidental expenses, including pay of messenger, during the fiscal year ending June 30, 1870, to be charged to the deficiency appropriation.*

DR.		CR.	
Amount paid as per vouchers forwarded August 10, 1870.	\$1,397 00	By appropriation of July 15, 1870, (deficiency.)	\$2,700 00
Amount paid as per vouchers forwarded September 7, 1870.	491 24		
	1,888 24		
By balance.....	811 76		
	2,700 00		2,700 00

L.—*Statement of account of appropriation for survey of the eastern boundary line of Nevada, during the fiscal year 1870-71.*

DR.		CR.	
Feb. 6, 1871. Account of J. E. James, astronomer.	\$16,071 78	By appropriation of July 28, 1868.....	\$10,625 00
By balance.....	928 22	By appropriation of July 15, 1870.....	6,375 00
	17,000 00		17,000 00

M.—*Report of the surveyor general of Arizona Territory.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Tucson, Arizona Territory, August 30, 1871.

SIR: In compliance with your communication of April 7, 1871, I herewith present, in duplicate, a report of the surveying operations within the district of Arizona, for the fiscal year ending June 30, 1871.

Arizona was made a separate surveying district by an act approved July 11, 1870; the President caused my commission to be executed July 12, but the official notice of it did not reach me until November 5, upon which day I executed my bond and entered

upon the duties of the office. The records of all previous surveys in Arizona being in the California office, the year well advanced, and then being the most favorable season for field operations, I deemed it best to proceed to California, procure the official books, papers, &c., appertaining to this district, as well as other necessary supplies not obtainable here, and personally see that they were not delayed in transit. By so doing, early in January everything required to practically inaugurate field-work was at hand, except my general instructions, which were not received until March 3. Knowing that unexpended balances were passed to the general fund of the Treasury, and that less than half the fiscal year remained, I deemed it important to Arizona that surveys should commence, and therefore, without other directions than the law, I employed a complement of officers, entered into contracts, and ordered work to proceed, and am gratified to say that, in all essential particulars, the Department approved the steps taken in advance of specific instructions. By such prompt action the appropriation of \$10,000 for surveys, less \$385 39, was exhausted prior to June 30, and this small balance contracted for, and since that date the field-work therefor has been executed but not reported to your office.

The surveys performed and their locality are set forth in the accompanying documents. The money should have been expended in executing surveys in the vicinity of Prescott, but the meridian line was not extended there, and the route of it lay through a section infested with hostile Indians. Applications to the commanding officer of the military department for an escort to protect the deputy in the extension of the meridian brought no response, and therefore I directed work performed in the Santa Cruz and Gila Valleys, where present and prospective population most demanded it. Surveys under the appropriation for the present fiscal year are now going forward in the settled valleys and timbered sections in and about Prescott under two deputies, and most of the farmers who have occupied their lands for from one to seven years will soon have an opportunity to procure titles.

In accordance with instructions, I submitted estimates, with some explanatory reasons therefor, for the surveying service in this district for the fiscal year ending June 30, 1873, on the 27th July last, a copy of which is herewith transmitted and made part of this report. In that document I made no reference to the necessity of establishing the boundary between New Mexico and Arizona. It is evident that this should be provided for by an appropriation at the ensuing session of Congress, for before the close of the fiscal year ending in 1873 subdivisinal surveys may be demanded in the vicinity of the territorial boundary; and aside from this consideration there are many others, such as jurisdiction of courts, locality of voters and tax-payers, that readily suggest themselves.

#### LAND CLAIMS UNDER THE LAWS OF SPAIN AND MEXICO.

A proviso to the appropriation act of July 15, 1870, makes it the duty of the surveyor general of Arizona, under instructions from the Secretary of the Interior, "to ascertain and report upon the origin, nature, character, and extent of the claims to lands in said Territory, under the laws, usages, and customs of Spain and Mexico." Many such claims are reported to exist within this district, but as to their extent and validity I am unprepared to give an opinion. Verbal and written applications have been made to me by parties as agents or claimants of such claims, for information as to the prescribed method of initiating and conducting proceedings necessary to establish their titles under the United States laws. To the end that they might be correctly informed, on March 1 I addressed a letter to the General Land Office, a copy of which I transmitted to the Secretary of the Interior, suggesting that the contemplated instructions be furnished to my office. As yet none have been received by me.

Applications for but two mineral lands surveys have been made, and none for subdivisinal surveys under the deposit acts of May 30, 1862, and March 3, 1871, although under the latter act some are contemplated. The town site of Arizona City has been surveyed, and the completed plats and notes forwarded to the local and General Land Offices. It is hoped that the subdivisinal surveys will hereafter be extended over all town sites in advance of a demand for their entry, which is already done at Tucson and Prescott, and since the survey the authorities of Tucson have filed an application for entry, and those of Prescott probably soon will.

#### MINING.

I have no statistics on mining, in Arizona, of sufficient accuracy to justify their presentation. However, it is a leading branch of industry now, and destined to be of vast importance. It would presently be very large but for the distance from cheap transportation, and notably because of the persistent hostility of the Indians in nearly every mining district. Very many mines, heretofore operated with large returns, have been practically abandoned for the latter reason. Excepting near the Colorado River, life and property are not at this time regarded safe from Indian attacks in the mining sections; therefore exploration is checked, development hindered, cost of all supplies increased to astonishingly high figures, and none but extraordinarily rich mines



can be operated with profit. The Vulture Mining Company, at Wickenburg, has some two hundred men on its pay-roll; its mine is fifteen miles from the mill, and more than once men and teams on the road hauling ore have been murdered and stolen. Still its operations go on at a profit, except to human life. Recent discoveries of silver-bearing lodes, at Bradshaw Mountain, have started a new settlement strong enough for self-protection, but any road leading to it is very dangerous for small parties to travel. Labor continues on many old discoveries in Yavapai County, and the owners are determined to hold fast to their possessions even amid danger, until safety is secured either by military power, or the population which will certainly follow advancing railways. With the many terrible discouragements, numerous fortunes have been made by mining for the precious metals in Arizona. Led by Governor Safford, three hundred men are now in the unexplored mountains in search of mines, and incidentally for timber and water, and desirable soils for tillage—grazing being first rate on nearly every mountain and table land, and in the valleys. Large veins of *proven* good coal have been found in the White Mountains, near Camp Apache.

## TIMBER.

Timber is much more abundant than generally supposed, even by the majority who have traversed the traveled highways of the Territory. Pine, oak, and ash, are the better varieties, but mesquite, cottonwood, spruce, juniper, and black walnut, prevail, all of much value for fencing and fuel, and primitive buildings. I speak from extended observation, when I declare that, except Washington, none of the Territories excel this in quantity of timber.

## AGRICULTURE.

Excepting the rocky mesas or plateaus, eraggy mountain-sides, and here and there sandy and heavy alkali tracts, the soil of Arizona is very productive. Millions of acres which for want of rains in 1870 then appeared barren, are this year green with grass and reanimated vegetation. The town of Tucson is located upon what many of its own inhabitants term a barren *mesa*, yet wherever a flower, shrub, tree, or vine is planted and properly watered, the growth is vigorous. It is a great mistake, which too widely obtains, that the plateaus here are worthless. The recent rains have fully demonstrated the richness of the soil, and what may be done by irrigation. Areas of fifty and more miles, usually termed waterless deserts, are now green, and wherever persistent digging has been essayed, abundant water in wells has been found. Patient and skillful labor will, in time, leave but a small portion of Arizona unproductive. In all parts there are valleys of unquestioned richness that may be cultivated profitably with little labor, and while many of them are occupied now, still more are monopolized by the savage Apache; yet each year one or more are penetrated by poor men, seeking a genial climate and independent homes, and though in some cases one-fourth their number has been slain in a single season, the entire abandonment of any one settlement has not followed. The staple crops are corn, wheat, and barley. I have endeavored to procure accurate statistics of agricultural products, and only indefinite statements were obtained. With proper tillage and auspicious seasons, as large crops are produced as anywhere in the Union. For lack of rain about Prescott and in the Gila and Salt River Valleys, the staple crops are this year below the average, though some barley fields are reported to have yielded from 30 to 50 bushels per acre. One 100-acre lot of corn in the Santa Cruz Valley, south of Tucson, I am confident will yield 75 bushels to the acre. Other lots in the same valley will be very light, owing chiefly to a want of cultivation. The same may be said of other localities. The soil is demonstrated to be very productive, and improper tillage, or rather no tillage after seeding in poorly prepared ground, has occasioned more short crops than even scarcity of rain or any other single cause.

Every careful attempt at fruit-growing has been a success. Grape-cuttings planted last year in Salt River Valley produced choice fruit this. No one doubts the adaptability of our valley soils and climate to the successful production of nearly every species of fruit grown in the different latitudes. But for Indian ravages discouraging the people, Arizona would to-day have fine orchards and vineyards.

## GRAZING.

As a whole, probably Arizona is not surpassed by any State or Territory for grazing capacity. The area of rich pasture is scarcely limited except by the territorial boundaries. Reduced cavalry horses, carefully herded, regain their ordinary flesh and strength in two months, and beef cattle are fattened on grass at all seasons. Wherever the mountains have been explored numerous streams and springs have been discovered, and, as before stated, water can be found by digging wells, as in other sections of our nation. Situated as we are, between the Gulf of Mexico and the Pacific Ocean, our markets can but be always large and prices good. Reduce the Indian to a state of peace and average honesty, and liberal fortunes can nowhere else be more quickly and certainly made in the stock business. If the Government will give Arizona reliable peace, I shall thereafter regard any of its official positions with personal indifference.

## CLIMATIC.

The average temperature of Arizona is delightful. As in most newly settled and little-cultivated sections, malarial fevers prevail, but not in all parts, nor largely anywhere among those who use spring or well water, and have good personal care. Notwithstanding the high average temperature shown at some points, sun-strokes do not occur. Early in the summer I took measures to procure thermometrical records in widely separated sections, and have but partially succeeded, as will be seen by accompanying tabular statements.

No. 1 refers to Tucson, and like all others given shows the average temperature each month for the year ending June 30, 1871.

No. 2 gives a more complete record at Camp Crittenden, which place is situate in a direct line from Tucson south  $21^{\circ}$  east, fifty-eight miles distant.

No. 3 exhibits like climatic facts at Arizona City, which place is located at the junction of the Colorado and Gila Rivers, distant from Tucson in a direct line north  $79^{\circ}$  west, two hundred and eighteen miles.

No. 4 presents the record as kept at Camp Bowie, directly distant eighty-eight miles from Tucson, in a direction bearing south  $86\frac{1}{2}^{\circ}$  east.

No. 5 shows the average maximum and minimum temperatures for the year, as recorded at Camp McDowell, which is situate in township 3 north, range 6 east.

I am advised that at Wickenburg, which bears from here north  $39\frac{3}{4}^{\circ}$  west, one hundred and fifty-eight miles distant in a direct line, the average temperature for the year ending last June 30 was  $82\frac{3}{4}^{\circ}$ .

A promised statement from Prescott is not received, yet no more balmy and invigorating mountain climate can be found than there. The average is probably a little lower than at Camp Crittenden. Prescott is situate in townships 13 and 14 north of range 2 west, Gila and Salt River meridian, and in the border of a heavy and extensive tract of timber, principally pine.

The total fall of rain has not been reported from any quarter. At Tucson, during July and August of the present year, the fall aggregates 4.72 inches, and doubtless four times that quantity fell during the same months in the surrounding mountains, as on very many days and nights they were drenched by heavy falls when not any fell here. Lightning and thunder are frequent, sharp and startling. Several objects have been struck this year within view of my office.

## DOCUMENTS RELATING TO SURVEYS AND FINANCES.

These accompanying documents are:

A.—Statement of contracts entered into, payable out of the congressional appropriation.

B.—Account of appropriation for survey of public lands in Arizona for the fiscal year ending June 30, 1871.

C.—Account of appropriation for salaries and incidental expenses of the surveyor general's office for the same period.

D.—Number of plats made.

E.—Number of miles surveyed.

F.—List of lands subdivided.

G.—Estimates for surveying service for the fiscal year ending June 30, 1873, and explanations relating thereto.

Map of Arizona, showing the progress of surveys therein up to June 30, 1871.

I have the honor to be, very respectfully, your obedient servant,

JOHN WASSON,  
*Surveyor General for Arizona.*

Hon. WILLIS DRUMMOND,

*Commissioner General Land Office, Washington, D. C.*

No. 1.—Table showing average monthly temperature at Tucson, Arizona, for the year ending June 30, 1871.

Month.	Mean temperature.	Month.	Mean temperature.
July, 1870.....	86°. 23	January, 1871.....	52°. 71
August, 1870.....	85°. 00	February, 1871.....	52°. 12
September, 1870.....	81°. 00	March, 1871.....	59°. 46
October, 1870.....	70°. 47	April, 1871.....	64°. 45
November, 1870.....	60°. 11	May, 1871.....	77°. 15
December, 1870.....	53°. 36	June, 1871.....	92°. 76

## No. 2.

POST HOSPITAL, CAMP CRITTENDEN,  
Arizona Territory, August 16, 1871.

SIR: I have the honor to acknowledge the receipt of your favor of the 11th instant and very cheerfully comply with its request to furnish the "average temperature" and "extremes of temperature" as recorded at this post for the fiscal year ending June 30 1871, to wit:

Month.	Mean of observations taken—			Average daily mean.
	At 7 a. m.	At 2 p. m.	At 9 p. m.	
1870.				
July .....	70.45	80.09	69.48	73.34
August .....	68.12	78.87	67.51	71.51
September .....	65.56	79.80	65.00	70.12
October .....	56.00	72.29	54.19	60.82
November .....	42.83	66.06	44.30	51.06
December .....	30.54	52.70	35.19	39.48
1871.				
January .....	32.45	55.51	36.93	41.63
February .....	36.67	55.00	39.03	43.56
March .....	44.70	62.03	47.06	51.26
April .....	51.96	67.00	53.33	57.43
May .....	64.75	78.00	64.42	68.89
June .....	74.50	89.66	76.06	80.07

Trusting that the above will prove acceptable, I am, sir, very respectfully, your obedient servant,

D. D. T. NESTELL,  
Post Surgeon, Camp Crittenden, Arizona Territory.

JOHN WASSON, Esq.,  
Surveyor General, Arizona Territory.

No. 3.—Table showing temperature during the year ending June 30, 1871, at Arizona City, A. T., in latitude 32° 23' north, longitude 114° 34' west.

Month.	Mean of observations taken—			Average daily mean.
	At 7 a. m.	At 2 p. m.	At 9 p. m.	
1870.				
July .....	90.80	110.53	94.44	98.59
August .....	87.13	106.03	89.03	94.07
September .....	78.80	100.16	82.26	87.07
October .....	58.13	85.93	64.40	69.49
November .....	51.90	73.00	57.16	60.68
December .....	46.33	66.36	52.43	55.05
1871.				
January .....	50.52	71.45	57.54	59.47
February .....	49.17	69.03	58.28	58.83
March .....	56.45	78.32	67.00	67.25
April .....	61.43	83.30	70.60	71.77
May .....	71.38	93.64	79.03	81.30
June .....	80.90	106.60	89.46	92.32

Number of days rain during the year, 11.



## No. 4.

CAMP BOWIE, ARIZONA, *August 15, 1871.*

SIR: In compliance with your request, I have the honor to inclose a table of temperatures observed at this post for the year ending June 30, 1871:

Month.	Mean of observations taken—			Average daily mean.
	At 7 a. m.	At 2 p. m.	At 8 p. m.	
1870.				
July.....	72.80	82.87	74.87	76.84
August.....	72.12	84.61	73.93	76.89
September.....	70.36	83.40	72.30	75.35
October.....	61.19	73.41	62.93	65.84
November.....	52.23	64.66	55.73	57.54
December.....	40.12	50.51	42.83	44.49
1871.				
January.....	41.58	53.74	43.09	46.13
February.....	43.35	58.46	47.96	49.92
March.....	49.19	64.77	54.51	56.16
April.....	53.73	70.53	59.73	61.13
May.....	67.45	82.93	68.00	72.79
June.....	76.60	90.93	80.10	82.54

Very respectfully, your obedient servant,

J. N. ACHUFF,

*Post Surgeon, Camp Bowie, Arizona Territory.*

U. S. SURVEYOR GENERAL,

*Tucson, Arizona.*

No. 5.—Average monthly temperature, with extremes, for the year ending June 30, 1871, at Camp McDowell, Arizona Territory.

Month.	Average.	Maximum.	Minimum.	Remarks.
	°	°	°	
July, 1870 .....	91.88	108	74	These observations were taken at 7 a. m., 2 p. m., and 9 p. m., each day.
August, 1870 .....	89.44	102	73	
September, 1870 .....	83.35	104	71	
October, 1870 .....	71.98	101	53	
November, 1870 .....	62.13	85	44	
December, 1870 .....	47.54	74	29	
January, 1871 .....	51.22	75	30	
February, 1871 .....	52.74	71	34	
March, 1871 .....	59.38	79	40	
April, 1871 .....	67.75	92	48	
May, 1871 .....	83.22	102	66	
June, 1871 .....	91.46	107	75	

The mean temperature for the year was 71°.

Table showing average monthly temperature and amount of rain-fall during the year ending June 30, 1871, at Prescott, Arizona.

Month.	Average temperature.	Rain-fall.	Month.	Average temperature.	Rain-fall.
	°	Inches.		°	Inches.
July, 1870 .....	72.92	7.98	January, 1871 .....	41.15	0.70
August, 1870 .....	68.98	3.49	February, 1871 .....	43.50	1.20
September, 1870 .....	61.92	0.00	March, 1871 .....	50.12	0.10
October, 1870 .....	52.87	1.59	April, 1871 .....	50.48	1.92
November, 1870 .....	46.41	0.30	May, 1871 .....	62.73	0.47
December, 1870 .....	33.19	0.53	June, 1871 .....	71.80	0.00

A.—Statement of contracts entered into by the United States surveyor general for Arizona, with deputy surveyors, for surveys of public lands, during the fiscal year ending June 30, 1871, and payable out of the public appropriations for that fiscal year.

Name of deputy.	Date of contract.	Description of work.	Meridian.	Amount of contract.	Returned amount.
S. W. Foreman...	1871. Jan. 2	First standard south along the south boundary of township 5 south, range 10 east. Second standard south along the south boundary of township 10 south, range 11 east, and of section 36, township 10 south, range 10 east. Third standard south along the south boundary of township 15 south, ranges 11, 12, and 13 east. Range line, between ranges 10 and 11 east, townships 6 to 15 south, inclusive. A guide meridian, between ranges 12 and 13 east, from township 13 south, inclusive, to the Mexican boundary. Extent of townships 13, 14, and 15 south, range 13 east. Subdivisions of townships 13 and 14 south, range 13 east.	Gila and Salt River..	\$4,000 00	\$3,697 61
Do.....	Feb. 13	First standard south along south boundary of township 5 south, ranges 2 and 1 east, and 1, 2, 3, 4, 5, 6, and 7 west. Extent and subdivisions of about three townships, in the neighborhood of Gila Bend.*	.....do .....	3,400 00	3,438 29
Do.....	Mar. 16	Extent and subdivisions of township 2 south, range 5 west, and of townships 3 and 4 south, range 4 west.	.....do .....	2,000 00	1,878 46
Do.....	April 30	Subdivisor of township 15 south, range 13 east.	.....do .....	600 00	600 25
Do.....	May 27	Gila and Salt River meridian, from the first to the second standards north.	.....do .....	375 00	.....

\* Partly impracticable on account of mountains.

## REPORT OF THE COMMISSIONER OF

B.—Statement of account of appropriations for the survey of public lands in Arizona during the fiscal year ending June 30, 1871.

Date of account.	In favor of—	Date of contract.	Amount.	Date.	On account of—	Amount.
1871. March 20 May 1 May 18 May 24	S. W. Foreman..... ..... do ..... ..... do ..... ..... do ..... Balance of appropriation applicable to contracts made previous to June 30, 1871 .....	1871. Jan. 2 Feb. 13 Mar. 16 April 30	\$3,697 61 3,438 29 1,878 46 600 25  385 39 10,000 00	1870. July 15.	By appropriation of this date.	\$10,000 00     10,000 00
				1871. June 30.	Balance of appropriation applicable to contracts made previous to June 30, 1871 .....	385 39

C.—Account of appropriations for the salary of surveyor general of Arizona, for clerks in his office, and for incidental expenses.

DR.

CR.

Date.	Account.	Amount.	Date.	Appropriations.	Amount.
1871. June 30.	To account of John Wasson, for services as surveyor general, for the year ending June 30, 1871. To amount paid clerk and draughtsman for the year. To amount paid for incidentals for the year. Balance of appropriation for compensation of surveyor general. Balance of appropriation for compensation of clerks in his office. Balance of appropriation for incidental expenses.	\$1,964 67 1,853 33 1,922 96 1,035 33 1,146 67 77 04 8,000 00	1871. July 15.  July 15. July 15.	By appropriation for compensation of surveyor general of Arizona, made this date. By appropriation for compensation of clerks in his office, made this date. By appropriation for incidental expenses, made this date.	\$3,000 00 3,000 00 2,000 00   8,000 00

D.—Statement of plats made in the office of the United States surveyor general for Arizona, during the fiscal year ending June 30, 1871.

Description.	Original.	Department.	Register.	Total.
Plats of meridian, standard, range, and exterior lines.....	4	4	8	8
Plats of subdivision lines .....			39	39
Plats of subdivision lines .....	10	10	10	30
General map .....	1	1	2	2
Total.....				79



E.—Statement of the number of miles surveyed in Arizona during the fiscal year ending June 30, 1871.

Name of surveyor.	Date of contract.	Standard lines.			Township lines.			Section lines.			Meander lines.		
		Miles.	chs.	lks.	Miles.	chs.	lks.	Miles.	chs.	lks.	Miles.	chs.	lks.
S. W. Foreman.	Jan. 2, 1871	31	00	00	162	63	38	127	66	90			
Do .....	Feb. 13, 1871	24	00	00	66	36	41	210	76	88	17	9	80
Do .....	Mar. 16, 1871				42	37	55	123	31	71	13	38	90
Do .....	Apr. 30, 1871							60	1	98			
Total.....		55	00	00	271	62	34	522	17	47	30	48	70

Grand total, 879 miles, 48 chains, 51 links.

F.—List of lands surveyed in Arizona for the fiscal year ending June 30, 1871.

No. of tps.	Description.	Meridian.	Public land.	Unsurv'd mt. land.
			<i>Acres.</i>	<i>Acres.</i>
1	Township 14 south, range 13 east .....	Gila and Salt River...	22,999.05	
2	Township 13 south, range 13 east .....	do .....	22,970.78	
3	Township 5 south, range 4 west .....	do .....	22,390.68	636.00
4	Township 5 south, range 5 west .....	do .....	20,946.45	2,082.00
5	Township 5 south, range 6 west .....	do .....	23,032.54	
6	Township 4 south, range 7 west .....	do .....	8,000.00	15,000.00
7	Township 4 south, range 4 west .....	do .....	20,628.27	2,380.00
8	Township 3 south, range 4 west .....	do .....	22,784.02	
9	Township 2 south, range 5 west .....	do .....	2,560.00	20,440.00
10	Township 15 south, range 13 east .....	do .....	23,047.87	
	Total .....		187,559.66	40,538.00

## G.

UNITED STATES SURVEYOR GENERAL'S OFFICE FOR ARIZONA,  
Tucson, Arizona, July 27, 1871.

SIR: Referring to your communication of April 7, 1871, marked E, (left corner,) regarding estimates for the surveying service in the district of Arizona, for the fiscal year ending June 30, 1873, I have the honor to submit the following:

For surveying 400 miles standard lines, at \$15 per mile..... \$6,000 00  
 For surveying 625 miles exterior township lines, at \$12 per mile..... 7,500 00  
 For surveying 1,650 miles subdivision lines, at \$10 per mile..... 16,500 00

Total estimate for public surveys..... 30,000 00

For expenses incidental to the surveying service for the same year:

For salary for surveyor general ..... \$3,000 00  
 For salary for clerks..... 4,000 00  
 For rent, fuel, and other incidentals..... 2,500 00  
 9,500 00

Total estimates..... 39,500 00

In reference to these estimates I beg leave to remark:

1. Commencing at the most suitable points on the present extension of the public surveys, it will be necessary to extend the first or second standard south, to the Colorado River in the vicinity of Arizona City; also the third or fourth standard north, to the same stream at or near Fort Mohave; and also a standard eastward to the eastern boundary of Arizona, at a point where the line of the Atlantic and Pacific Railway will intersect said boundary.

2. In view of the many small settlements where the present standards and meridians run, and on the line of the standards contemplated by these estimates, taken in connection with the provision of law embraced in section 11, act of May 30, 1862, as amended by act of March 3, 1871, whereby deposits for surveys may be applied on payment for lands, I have deemed it best for the Government, and in the end no detriment

to the settler, to provide for the survey of the exteriors of a larger number of townships than it is contemplated to subdivide by congressional appropriation.

3. I am well convinced that there should be subdivided as much land on the Colorado River bottom alone, ere the close of the fiscal year, June 30, 1873, as is contemplated by the estimate for that purpose. It is quite certain that the Texas Pacific and Atlantic and Pacific Railways will reach the Colorado River bottom from the west in 1873, and the engineers of the latter road are now near the eastern Arizona boundary, whither adventurous pioneers are already going, with a purpose to secure some of the many unsurpassed sites for stock-growing and fine tracts of timber.

4. And generally, I would respectfully add that, if the assurances of the railway men are reliable, ere the close of 1873 we will have the Texas Pacific and Atlantic and Pacific Railways near, if not within our borders, at four points—two on the east and two on the west; yet I have chosen to place my estimates upon the wants of the Territory, with little reference to railway influences, though they will certainly create some demand for public surveys. At and about the junction of Gila and Colorado rivers, and for many miles immediately below Fort Mohave, the area of choice grain and fruit lands is large, and is now settled by some hundreds of farmers.

As my estimates are made upon careful consideration, and with a view alone to meet the reasonable requirements of the surveying service during the period named, I trust you will give them your approval.

My estimates for clerical and incidental expenses aggregate but \$500 more than the present allowance, and, as the business of the office will be enlarged, I hope it may be your pleasure to recommend an appropriation for the sums as stated.

Very respectfully, your obedient servant,

JOHN WASSON,  
*Surveyor General.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*

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### N.—*Report of the surveyor general of California.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
*San Francisco, September 12, 1871.*

SIR: In compliance with your instructions, I have the honor to submit in duplicate the annual report of this office, in relation to the surveying service of California during the fiscal year ending June 30, 1871.

I also forward the tabular statements, as follows:

A.—Statement of contracts entered into by the United States surveyor general for California, with deputy surveyors, for surveys of public lands during the fiscal year ending June 30, 1871, and payable out of the public appropriation for that year.

B.—Statement of contracts entered into by the United States surveyor general for California, with deputy surveyors, for surveys of public lands during the fiscal year ending June 30, 1871, and payable out of private deposits made in conformity with the acts of May 30, 1862, and March 3, 1871.

C.—Statement of surveys of mines in California, in conformity with the law of July 26, 1866, for the fiscal year 1870-71.

D.—Statement showing the number of miles surveyed in California up to June 30, 1871.

E.—List of lands surveyed in California during the fiscal year ending June 30, 1871.

F.—Statement of plats made in office of the surveyor general for California during the fiscal year ending June 30, 1871.

G.—Statements of transcripts of field-notes of public surveys sent to the Department at Washington, from the surveyor general's office for California, during the fiscal year 1870-71.

H.—Statement of transcripts, decrees of court, descriptive notes, &c., relating to private land claims, and accompanying plats for patent, transmitted to the Commissioner of the General Land Office during the fiscal year ending June 30, 1871.

I.—Statement of account of appropriation for the survey of public lands in California during the fiscal year 1870-71.

J.—Statement of special deposits for surveys of public lands in California during the fiscal year 1870-71.

K.—Statement of special deposits for surveys of mining claims in California during the fiscal year 1870-71.

L.—Account of appropriations for the salary of surveyor general for California for the fiscal year ending June 30, 1871.

M.—Statement of special individual deposits for compensation of clerks and draughts-

men in office of United States surveyor general for California during the fiscal year 1870-71, deposited with the Assistant United States Treasurer at San Francisco, as per certificate on file in this office.

N.—Statement of account of appropriation for compensation of clerks and draughtsmen in office of United States surveyor general for California, for the fiscal year ending June 30, 1871.

O.—Statement of account of appropriation for office-rent, stationery, pay of messenger, and incidental expenses of the United States surveyor general's office for California, for the fiscal year ending June 30, 1871.

P.—Estimates for the surveying service in California for the fiscal year ending June 30, 1873.

Having been in charge of the office only since the 17th of February last, it cannot be expected that I shall make an elaborate report, from personal knowledge, as to the operations of the same; however, as I have been a resident of California since the year 1849, and have, during that time, traveled extensively over the State, I claim to have some knowledge of the wants and capabilities of the country, and of what may be required to develop its intrinsic resources.

I shall, therefore, only make a few passing remarks and suggestions in relation to the most important branches of the business of the office, as classed under the following heads:

#### SURVEYS OF SPANISH GRANTS.

Unfortunately for the prosperity of California, many delays have occurred in the definitive settlement of the boundaries of Spanish grants in California.

Many causes have operated to produce these delays, some of which have been unavoidable, but some of which, still existing, should, if possible, be remedied.

Eight hundred and thirteen claims were presented to the board of land commissioners for confirmation nearly twenty years ago. Of these, some 170 have been rejected by the courts.

Of the claims confirmed perhaps not much over one-half have been patented. Many surveys, made years ago, approved by the surveyor general and advertised under the law of 1860, but not ordered into court or sent to the Department at Washington before the passage of the act of July 1, 1864, have now to be readvertised under that law.

Soon after taking charge of the office I caused a list to be made of such cases as required readvertisement under the law of 1864; and, as far as I could ascertain who were the owners of the ranches, I sent them printed notices, requesting them to make the necessary deposits for the publication of these surveys. To these notices there were not more than three or four responses; and these old surveys still "drag their slow length along," or, rather, remain in the same condition in which they have been for years.

In some cases large tracts of land have been suspended from entry, as public land, on account of Spanish grants which are still pending in the courts. Some of these cases are in the United States district court, and some are on appeal to the Supreme Court of the United States, or, the five years allowed by law in which to take an appeal have not yet expired, and in the mean while large tracts of land remain suspended from entry until the expiration of the five years, even though the claimant of the grant may have no hope of a final confirmation of the same.

It seems to me that some legislation is required on this subject, shortening the time in which appeals are allowed to be taken to the Supreme Court, and thus forcing these matters to a definitive settlement as soon as possible, that the prosperity of the country may not be materially retarded.

#### SURVEYS OF PUBLIC LANDS.

By referring to the State map, compiled in this office, it will be seen that the most desirable portions of Central and Southern California are taken up by Spanish grants.

Most of the public lands in these regions, susceptible of being surveyed, have been long since surveyed by the Government, even to the Colorado Desert; but, as the plain lands in these sections of the State, particularly in the south, are more or less arid, but little of the same have yet been taken up by settlers.

Until within a few years past but little attention was given to the northern portion of the State save for mining purposes, it being almost unknown to the agriculturist. It is now, however, ascertained that, in that region, there are many valleys inviting to the agriculturist and grazier, and which are for many purposes superior to the lands of the southern country.

The climate being cooler and moister than that of the south, it is better suited to the growth of grasses than the southern country, and for this reason is more desirable for dairy purposes than that portion of the State.

This section is now attracting much attention, and immigrants from the North and Northwest, sturdy farmers with some means, are anxiously seeking homes for their families in these mountain regions.



In this section of the State the *settlements* are in advance of the *surveys*. For these reasons a general survey of this region seems important, not only as a protection to these pioneers of civilization, but also as a matter of public policy, since it would promote the rapid settlement of the country and the speedy development of its resources.

I learn from the report of one of my deputies that in the northeast portion of the State there are some 150 unsurveyed townships, nearly all of which are susceptible of being surveyed, heavily timbered, and abounding in natural meadows. There is also a tract in the northwestern portion of the State, on the sea-coast, which, for the same reason, should be surveyed as soon as possible.

In view of the facts above set forth, I shall expend the principal part of the appropriation for public surveys for the fiscal year ending June 30, 1872, in making surveys in the northern part of the State.

I beg leave here to make some suggestions in relation to the tract of country embracing what are known as the "foot-hills" of the Sierra Nevada Mountains, extending from the plain to the western slope of the Sierra proper. In this district, although it contains some small valleys of good land, the soil is generally poor, and not of much value for farming purposes.

I would suggest the propriety of graduating the price of land in this section in proportion to its value; and also, that of the poorer quality of lands settlers be permitted to pre-empt more than 160 acres, since, in many cases, that quantity would not be sufficient to support an ordinary family.

#### SWAMP AND OVERFLOWED LANDS.

The settlement of questions arising in the segregation of swamp and overflowed lands has become an important branch of the duties of this office.

While it is true that there are large bodies of land in this State which properly come within the meaning of the term "swamp and overflowed," since they cannot be made productive without reclamation, still, it is also true that large tracts are claimed as swamp and overflowed which cannot justly be so considered under any proper interpretation of the laws in relation thereto. This is especially the case in relation to lands claimed to be swamp and overflowed situated in the mountain districts of the State.

In these elevated regions are found many valleys which are annually overflowed by the melting of the snow on the mountains, but which, like the Delta of the Nile, are fertilized by these periodical inundations, which are soon drained off into the neighboring mountain streams, leaving the farmer ample time to sow his seed and reap his harvest before the coming of the next winter.

It is worthy of remark that the reclaimed swamp or tule lands of California promise to become exceedingly valuable, since they are found to be among the most productive lands in the State, there being instances in which two crops have been produced during the season, one of 70 bushels of barley to the acre, followed by a good crop of potatoes.

Since I have been in office I have held some six swamp-land examinations, embracing an area of some 45,000 acres, and I have now two appointments for holding examinations.

In making these investigations, I endeavor to ascertain the character of the land on September 28, 1850, by taking the testimony of witnesses produced, as well as by a personal inspection of the premises, and this is sometimes difficult, since, in many cases, the *debris* from the mountain mines has so filled up the channels of the streams as to have materially changed the character of the land bordering on the same.

#### SURVEYS OF MINING CLAIMS.

This branch of the business of the office is rapidly increasing; twenty-five surveys of mines have been completed during the year ending June 30, 1871, as shown by the accompanying statement. This more than doubles the number surveyed during the preceding year.

Many deposits have been made for surveys not yet executed, and the register of the land office at Sacramento informs me that some 200 applications are ready to be sent to this office from his district. This increase of the surveys of mines adds much to the clerical labors of the office, and, indeed, unless the present force be increased, I do not see how the work of the office can be properly kept up.

#### RAILROADS.

Rapid progress is being made in the construction of railroads in the State.

On the Oregon branch of the Central Pacific, a section of twenty-six miles, from Chico to Sesma, has been completed, and a further section of forty-seven miles, extending from Sesma to Reed's Ferry, is under construction, and its completion is contemplated within the next sixty days.

On the San Joaquin division a section of twenty miles had been completed on the 30th of June, of which ten miles, extending from the Stanislaus River to Modesto, near the Tuolumne River, were built during the year ending on the day above mentioned. A further section of forty miles is in process of construction, extending to Bear Creek, which will be completed in about ninety days.

On the Southern Pacific a section of twenty miles, from Gilroy southward, was completed, equipped, and in running order on the 30th of June last; and from a point two miles south of Gilroy, a branch road to Watsonville is under construction, seventeen miles of which will be in running order on the 1st of October.

On the San Francisco and North Pacific, from Donohue Landing to station on island near Healdsburg, thirty-five and three-quarter miles are completed and in running order.

On the Stockton and Copperopolis, from Stockton to Milton, thirty miles completed and in running order.

#### AGRICULTURAL RESOURCES OF CALIFORNIA, CLIMATE, SEASONS, ETC.

Twenty years ago California was generally supposed to be comparatively unfit for agriculture; subsequent experience has, however, shown that in no country in the world does the earth more liberally reward the toils of the husbandman. This is true, not only in regard to all the cereals, but also as to all the fruits, vegetables, &c., common to the temperate zone, together with many semi-tropical growths which, in the southern portion of the State, are produced to great perfection.

Experiments have been made in cotton-growing in different parts of the State, and the results indicate that this plant can be cultivated with profit in many portions of the country, particularly on the reclaimed lands bordering the principal rivers. The culture of silk is attracting considerable attention, and the indications seem to be that in time this will become a profitable branch of industry in the State.

An extensive beet-sugar manufactory has recently been established in the county of Alameda, which promises to be largely remunerative. It is calculated that this factory will reduce 50 tons of beets every twenty-four hours, the product of which will give 6,550 pounds of unrefined sugar, consuming the annual product of 400 acres of land.

While, however, the soil of California so bountifully furnishes all that is required for the support of man, still it must be admitted that the country is subject to certain meteorological phenomena, which sometimes blight the hopes of the agriculturist.

Since the fruitfulness of the summer harvest is ever indicated by the amount of rain that falls during the winter months, the California farmer naturally watches this season of the year with much interest.

The Spanish archives of this office furnish a minute history of the country during a century past; during this period, we learn that the country has been subject to seasons of drought, of more or less severity, in some of which most of the stock have perished for want of pasturage, and in some cases a large portion of the stock have been destroyed by order of the government, so that the remnant might be saved. And we know that, for the last twenty years, the American California farmer has been subject to the like visitations that often impoverished California rancheros. But now an extensive system of irrigation is in progress in the country, by means of canals, ditches, and artesian borings, which it is believed will in a great measure remedy the evils resulting from seasons of drought.

The topographical features of the country render irrigation a comparatively easy undertaking, since it is generally no very difficult matter to conduct the streams from their mountain sources across the neighboring valleys, in such a manner as to supply the earth with all the moisture necessary to cause it to produce an abundant crop; and where the topography of the country will not admit of this method of irrigation, water can be obtained almost anywhere by artesian borings, which give flowing springs. And thus the California husbandman in time will, in a measure, become independent of the showers of heaven, and valley and plain will in all seasons be made as fruitful as the land of Egypt.

#### EARTHQUAKES.

From time to time the inhabitants of California are startled by these sudden and terrible phenomena. There are many who turn pale at the mere mention of "earthquake;" and many there are who much prefer a residence in a humble wooden cottage to dwelling in a palatial edifice of brick or stone; for predictions are not wanting that some day the city of San Francisco will share the melancholy fate of the ancient cities of the plain. I shall endeavor to show, by the light of history, that these predictions are not well founded.

In making predictions in relation to future events, that result from the operation of natural laws, we should look to the past for data on which to base our judgment.

The Spanish archives of this office extend back to the year 1767. In these archives

frequent mention is made of earthquakes, and it is not at all probable that any shock of importance, occurring during the period over which they extend, escaped the notice of the old Spanish chroniclers.

Having been a resident of California since the year 1849, I have had an opportunity of observing the action of earthquakes in the country since that time. The severest shock since 1849 occurred in October, 1868, which very much frightened the inhabitants of San Francisco, and did some damage to the city.

Accounts are found in the archives of my office, of several earthquakes which I should judge, from the description of the same, to have been about as severe as the shock of October, 1868. One, occurring in 1809, did some damage to the Presidial building of San Francisco, and so frightened the inhabitants of the Mission of San Juan Bautista that for several nights they slept in the open air.

Another severe shock occurred in 1812, during which the tower of church at "San Juan Capistrano" falling upon the roof, crushed it in, and buried in the ruins some fifty Indians who had taken refuge in that sanctuary.

Many slight shocks are noticed by the historians of the times, but the two above referred to appear to have been the most severe that occurred from 1767 to 1849, as no record is found in the archives of any others of equal severity.

As before remarked, the shocks of 1809 and 1812 appear to have been about equal in strength to the shock of 1868.

Thus we find that while several earthquakes have occurred during the period of a century, of equal strength probably with the shock of 1868, none have occurred of greater severity. It is fair then to consider the shock of 1868 as a standard of the *maximum* force of the shocks of earthquake occurring in California during the last hundred years.

And on the hypothesis that earthquakes are the result of natural laws, which operate with some degree of regularity, it may be fairly presumed that a period of one hundred years would, in all probability, give the extreme limit of the result of the action of these laws.

Hence, having learned from reliable history, and from observation, the maximum strength of earthquakes occurring in California during a century past, we may from these data, with some degree of confidence, predict what their maximum strength will probably be during the next hundred years. And having ascertained from the history of the past the extent of the danger to be apprehended from the same cause in the future, it will be no difficult matter, with past experience, to provide against any serious damage that may be caused by these sudden and unwelcome visitors, by so constructing edifices as that they shall be proof against any such shock of earthquake as has occurred in California during the last hundred years.

Reasoning from the foregoing historical facts, I am firmly of the opinion that the earthquakes of California are not so much to be dreaded as is generally supposed, and, in fact, that they are far less dangerous to life and property than are the hurricanes of the South or the summer tornadoes of the North; and I have no doubt but that the inhabitants of San Francisco, and other California cities, may so construct their edifices of brick or stone as to feel a reasonable degree of confidence that they may stand, unless destroyed by fire or flood, until they shall crumble beneath the slowly wasting hand of time.

I am, very respectfully, your obedient servant,

J. R. HARDENBERGH,  
*United States Surveyor General for California.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*



*A.—Statement of contracts entered into by the United States surveyor general for California, with deputy surveyors, for surveys of public lands during the fiscal year ending June 30, 1871, and payable out of the public appropriation for that fiscal year.*

Name of deputy.	Date of contract.	Location of work.	Meridian.	Amount of contract.	Returned amount.	Remarks.
Alfred Banister.....	July 15, 1870	Township 3 north, ranges 9, 10, and 11 east.	Mount Diablo...	\$2,000 00	\$808 85	
Arthur W. Keddle.....	Aug. 12, 1870	Township 21 north, ranges 9, 10, 11, 12, and 13 east.	do.....			
Do.....	Aug. 12, 1870	Township 22 north, ranges 9, 10, 11, 12, and 13 east.	do.....	8,200 00		
Do.....	Aug. 12, 1870	Township 23 north, ranges 9, 10, 11, 12, and 13 east.	do.....			
Do.....	Aug. 12, 1870	Township 24 north, ranges 8, 9, and 10 east.	do.....			
Henry S. Bradley.....	Sept. 1, 1870	Township 16 north, range 10 east.	do.....	5,000 00		
Do.....	Sept. 1, 1870	Township 24 north, ranges 7, 8, 9, and 10 east.	do.....			
Do.....	Sept. 1, 1870	Township 18 north, range 10 east.	do.....			
Do.....	Sept. 1, 1870	Extension of the Mount Diablo meridian and sixth standard north.	do.....	1,944 00	1,029 00	Audited for \$11,116.
William J. Holman.....	July 30, 1870	Township 14 north, range 3 east.	do.....	50 00	40 00	
Samuel F. Swayne.....	Sept. 28, 1870	Township 15 north, range 6 east.	do.....	468 61	458 61	Audited for \$408.
Philip E. Drescher.....	Sept. 28, 1870	do.....	do.....	340 00	324 90	
William J. Holman.....	July 23, 1870	Sixth standard north.	do.....	1,000 00	918 58	
Samuel F. Swayne.....	Sept. 19, 1870	Township 2 north, range 1 east.	do.....			
William J. Lewis.....	Sept. 13, 1870	Township 2 north, ranges 1, and 2 west.	do.....			
Do.....	Sept. 16, 1870	Township 3 south, range 5 east.	do.....			
Do.....	Sept. 16, 1870	Township 4 south, ranges 5 and 6 east.	do.....	4,000 00	4,114 99	Audited for \$4,000.
Do.....	Sept. 16, 1870	Township 5 south, ranges 4, 5, and 6 east.	do.....			
William H. Carlson.....	Sept. 2, 1870	Township 29 north, ranges 5 and 6 east.	do.....			
Do.....	Sept. 2, 1870	Township 29 north, ranges 5 and 6 east.	do.....	3,300 00	1,381 78	More work to be returned under this contract.
Do.....	Sept. 2, 1870	Township 30 north, range 6 east.	do.....			
James G. Mather.....	Oct. 24, 1870	Township 12 north, range 9 east.	do.....	2,900 00	2,420 07	Audited for \$2,900.
Do.....	Oct. 24, 1870	Townships 12, 13, and 14 north, range 10 east.	do.....	1,800 00	1,353 18	Audited for \$1,632 38.
J. M. Ingalls.....	Sept. 23, 1870	Townships 14 and 15 north, range 11 east.	do.....	2,600 00	2,141 39	Audited for \$2,586.
W. F. Ingalls.....	Sept. 20, 1870	Townships 11, 12, and 13 north, range 11 east.	do.....	900 00		
Henry F. Terry.....	Nov. 12, 1870	Township 6 north, range 12 east.	do.....	600 00	598 92	
Geo. W. Schell.....	Oct. 1, 1870	Township 2 north, range 13 east.	do.....			
John C. Partridge.....	Oct. 14, 1870	Township 37 north, range 11 east.	do.....	1,800 00	1,774 03	
Do.....	Oct. 14, 1870	Township 38 north, ranges 10 and 11 east.	do.....	250 00		
Do.....	Oct. 12, 1870	Townships 47 and 48 north, range 16 east.	do.....	300 00		
Do.....	Oct. 25, 1870	First standard north.	San Bernardino.	1,000 00	233 98	
W. H. Norway.....	Oct. 18, 1870	Township 21 north, range 43 west.	Mount Diablo	400 00		
I. N. Chapman.....	Nov. 17, 1870	Township 32 south, range 30 east.	do.....	2,100 00	1,893 13	Orth died before completing this survey.
George W. Orth.....	Dec. 12, 1870	Township 19 north, ranges 6 and 7 east.	do.....	900 00		
Denton D. Brown.....	Jan. 12, 1871	Township 4 north, range 13 east.	do.....	400 00		
Henry F. Terry.....	Jan. 10, 1871	Township 12 north, range 8 east.	do.....	600 00		
W. H. Brown.....	Jan. 16, 1871	Township 3 north, range 24 and 25 west.	San Bernardino.	800 00		
A. B. Beavrais.....	Jan. 23, 1871	Township 3 north, range 13 east.	Mount Diablo	300 00		
J. W. Mackall.....	Jan. 25, 1871	Township 15 north, range 8 west.	do.....	300 00		
W. H. Carlson.....	Jan. 13, 1871	Township 12 north, range 8 west.	do.....	300 00		
J. M. Ingalls.....	April 5, 1871	Township 15 south, range 9 east.	do.....	3,000 00		
Do.....	April 5, 1871	Townships 15, 16 south, range 11 east.	do.....			

## A.—Statement of contracts entered into by the United States surveyor general for California, &amp;c.—Continued.

Name of deputy.	Date of contract.	Location of work.	Meridian.	Amount of contract.	Returned amount.	Remarks.
George Small .....	April 6, 1871	Township 14 south, ranges 10 and 11 east.....	Mount Diablo .....	{ \$3,000 00	.....	<i>Nunc-pro-tunc</i> contract. { <i>Nunc-pro-tunc</i> contract, to provide for excess of work under contracts of August 27, 1869, and June 29, 1870.
Do.....	April 6, 1871	Township 15 south, range 10 east.....	do.....	{ 60 00	.....	
J. J. Cloud.....	April 6, 1871	Township 1 south, range 4 east.....	do.....	720 00	.....	
J. M. Anderson.....	June 20, 1871	Township 11 north, range 10 east.....	do.....	.....	.....	
J. G. Mather.....	Jan. 16, 1871	Township 7 north, range 8 east.....	do.....	.....	.....	
Do.....	Jan. 16, 1871	Townships 4, 5, 7, and 8 north, range 9 east.....	do.....	{ 1,819 98	\$1,744 26	
Do.....	Jan. 16, 1871	Townships 4, 5, 6, 7, 8, and 10 north, range 10 east.....	do.....	.....	.....	
Do.....	Jan. 16, 1871	.....	.....	.....	.....	
Do.....	Jan. 16, 1871	.....	.....	.....	.....	
Do.....	Jan. 16, 1871	.....	.....	.....	.....	

J. R. HARDENBERGH,

United States Surveyor General for California.

B.—Statement of contracts entered into by the United States surveyor general for California, with deputy surveyors, for surveys of public lands during the fiscal year ending June 30, 1871, and payable out of private deposits made in conformity with the acts of May 30, 1862, and March 3, 1871.

Name of deputy.	Date of contract.	Location of work.	Meridian.	Amount of contract.	Returned amount.	Depositors.
W. M. Johnson.....	July 26, 1870	Township 19 north, range 1 west.....	Mt. Diablo.....	\$640 00	\$310 33	W. F. Goud.
E. J. Edwards.....	Aug. 2, 1870	Township 16 north, ranges 4 and 5 west.....	do	.....	.....	W. F. Goud.
E. J. Edwards.....	Aug. 2, 1870	Township 17 north, range 4 west.....	do	897 00	.....	W. H. Boece.
John Reed.....	Nov. 5, 1870	Township 7 south, range 2 west.....	do	213 00	90 91	Franklin Martin.
S. W. Smith.....	Nov. 19, 1870	Township 13 south, range 5 east.....	do	90 00	.....	Henry Miller.
John Reed.....	Nov. 29, 1870	Township 28 south, range 19 east.....	do	559 50	.....	W. R. Standefer.
John Goldsworthy.....	Jan. 9, 1871	Township 2 south, ranges 1 and 2 west.....	San Bernardino.....	380 00	.....	John Hancock
John Goldsworthy.....	Jan. 9, 1871	Township 1 south, range 14 west.....	do	300 00	.....	D. W. Spear.
E. C. Uren.....	Feb. 6, 1871	Town site of Dutch Flat in township 16 north, range 10 east.	Mt. Diablo.....	40 00	.....	.....
E. C. Uren.....	Feb. 16, 1871	Town site of Alta in township 16 north, range 10 east.	do	50 00	.....	E. M. Barnard.
J. W. McFarney.....	Feb. 23, 1871	Township 6 north, range 6 west.....	do	185 00	.....	Clinger & Hester.
Gustavus Cox.....	Mar. 21, 1871	Township 8 north, range 13 west.....	do	168 00	.....	Franzeska Blanchard.
I. N. Chapman.....	May 12, 1871	Township 11 north, range 5 west.....	do	445 00	454 25	Baustier, Barnes & Thompson.
W. S. Powell.....	May 15, 1871	Township 21 north, range 22 east.....	do	125 00	.....	George Crossman.
T. J. Dowdoy.....	Feb. 18, 1871	Township 8 north, range 2 west.....	do	310 00	.....	M. D. Markey.
G. T. Allard.....	Feb. 6, 1871	Simms' Island, in township 1 north, range 6 west	do	25 00	.....	John Simms.
J. H. Pieper.....	June 7, 1871	Township 9 south, range 1 east.....	do	800 00	.....	Delmas, Creighton & Campion.
J. N. Chapman.....	June 14, 1871	Township 40 north, range 5 west.....	do	630 00	.....	C. Tucker, et al.
John Reed.....	June 16, 1871	Townships 28 and 30 south, range 30 east.....	do	440 00	.....	Crocker, Wilson & Crocker.
John Reed.....	June 20, 1871	Township 30 south, range 22 east.....	do	188 00	.....	Joseph Queralo.
D. D. Brown.....	June 20, 1871	Township 16 north, range 2 west.....	do	520 00	.....	Gulp, Cheney & Gulp.
D. D. Brown.....	June 30, 1871	Township 16 north, range 6 west.....	do	672 00	.....	Gaither & Simmons.

\* Audited for \$640.

J. R. HARDENBERGH,  
United States Surveyor General for California.



C.—Statement of surveys of mines in California, in conformity with the law of July 26, 1866, for the fiscal year 1870-71.

Date of survey.	Name of mine.	Description.	Location.
1870.			
October .....	Little York claim .....	Placer .....	Nevada County.
November .....	Greenwood .....	Gold quartz .....	El Dorado County.
November .....	Davidson .....	do .....	Do.
December .....	Rock River .....	do .....	Butte County.
December .....	Nevada .....	do .....	Nevada County.
1871.			
January .....	Pond and Company's claim .....	Placer .....	Placer County.
January .....	Henry Dorr claim .....	do .....	Do.
March .....	Spring Hill .....	Gold quartz .....	Nevada County.
April .....	Rough and Ready .....	do .....	Plumas County.
April .....	Eureka .....	do .....	Do.
April .....	Pioneer Chief .....	Gold and silver quartz .....	Calaveras County.
May .....	New York Hill .....	Gold quartz .....	Nevada County.
May .....	Lincoln .....	do .....	Amador County.
May .....	Zeile .....	do .....	Do.
May .....	Oncida .....	do .....	Do.
May .....	Cozzens' claim .....	Placer .....	Nevada County.
May .....	Slate Lodge .....	Gold quartz .....	Do.
May .....	Wolcott claim .....	Placer .....	Do.
May .....	Hancock & Tibbits .....	Gold quartz .....	Calaveras County.
June .....	Kennedy .....	do .....	Amador County.
June .....	Maxwell .....	do .....	Do.
June .....	Amador .....	do .....	Do.
June .....	Blue Jacket .....	do .....	Do.
June .....	Socrates .....	Quicksilver .....	Sonoma County.
June .....	Railroad .....	Gold quartz .....	Amador County.

J. R. HARDENBERGH,  
United States Surveyor General for California.

D.—Statement of number of miles surveyed in California to June 30, 1871.

Name of surveyor.	Date contr't.	Base.		Meridian.		Standard.		Traverse.		Meander.		Township.		Section.	
		M.	ch. li.	M.	ch. li.	M.	ch. li.	M.	ch. li.	M.	ch. li.	M.	ch. li.	M.	ch. li.
Miles surveyed to June 30, 1870, as per last report.		343	04 74	707	00 41	4,409	33 37	2,755	59 35	297	45 24	23,773	05 47	91,707	14 27
Henry Austin	Sept. 14, 1868					3	28 20					14	73 73	156	05 71
James G. Mather	Nov. 9, 1868											26	30 69	100	59 48
James S. Murray	Dec. 17, 1868	12	00 00							43	19 80	59	54 19	59	54 19
E. H. Dyer	Mar. 16, 1869											1	47 50	121	49 57
James Pascoe	April 2, 1869									26	52 47	43	73 14	112	35 52
Denton D. Brown	Aug. 10, 1869														
Arthur W. Keddie	Aug. 23, 1869					56	35 38								
James G. Mather	Aug. 27, 1869					11	39 85								
A. B. Beauvais	Aug. 27, 1869	2	79 76												
Hubert C. Ward	Sept. 2, 1869					1	40 00								
Alexander McKay	Sept. 21, 1869														
George W. Orth	Sept. 28, 1869					15	00 00								
Philip E. Drescher	Oct. 1, 1869														
George W. Schell	Oct. 23, 1869					6	00 00			12	07 09				
John C. Partridge	Oct. 26, 1869														
J. M. Ingalls	Nov. 2, 1869					77	27			10	58 57				
Henry F. Terry	Nov. 2, 1869														
Hubert C. Ward	Mar. 2, 1870														
Stephen B. Gilbert	Mar. 4, 1870									1	70 50				
Philip E. Drescher	June 23, 1870														
James G. Mather	June 29, 1870														
Alfred Banister	July 16, 1870														
Holman and Swayne	July 23, 1870			21	52 82										
William M. Johnson	July 26, 1870			6	45 19										
W. H. Carlton	Sept. 2, 1870									12	74 59				
Holman and Swayne	Sept. 3, 1870									2	11 40				
J. J. Cloud	Sept. 16, 1870			18	00 00	47	00 00								
W. J. Lewis	Oct. 16, 1860					12	35 75								
W. F. Lewis	Sept. 19, 1870									20	35 37				
W. F. Ingalls	Sept. 20, 1870														
J. M. Ingalls	Sept. 23, 1870														
E. W. Brown	Oct. 1, 1870														
George W. Schell	Oct. 14, 1870														
John C. Partridge	Oct. 18, 1870														
Isaac N. Chapman	Oct. 24, 1870														
James G. Mather	Nov. 3, 1870														
Henry F. Terry	Nov. 12, 1870					40	00								
Denton D. Brown	Dec. 12, 1870														
Henry F. Terry	Jan. 12, 1871														
William H. Carlton	Jan. 15, 1871									1	27 50				
Isaac N. Chapman	May 12, 1871														
Total miles surveyed to June 30, 1871.		338	04 50	753	18 45	4,563	79 82	2,755	59 35	1,037	25 35	24,503	72 88	59,860	33 71

J. R. HARDENBERGH, United States Surveyor General for California.

E.—List of lands surveyed in California from June 30, 1870, to January 30, 1871.

No. of townships surveyed.	Description.	Meridian.	Public land.		A.		B.	C.	D.	E.	F.	G.	Remarks.	Total.
			Acres.	Acres.	Confirmed private land claims.	Acres.	Acres.	Indian reservation.	Acres.	River, swamp, and overflowed land.	Unsurveyed public land.	Mining claims.		
1	Township 1 north, range 12 east.	Mount Diablo.	17,545.36	5,354.78										22,900.14
2	Township 1 north, range 13 east.	do.	21,866.47						880.00					22,746.47
3	Township 1 north, range 14 east.	do.	21,648.12						1,280.00			54.56		22,982.68
4	Township 1 north, range 15 east.	do.	22,133.15						800.00					22,933.15
5	Township 2 north, range 1 east.	do.	8,128.91	A.						E.			A + E	22,578.91
6	Township 2 north, range 12 east.	do.	22,943.55											22,943.55
7	Township 2 north, range 13 east.	do.	20,184.18						1,705.76					21,889.94
8	Township 2 north, range 14 east.	do.	21,365.12						1,403.65			11.34		22,778.11
9	Township 2 north, range 15 east.	do.	21,359.84						1,510.06					22,869.90
10	Township 3 north, range 9 east.	do.	21,326.74						2,561.35					23,888.09
11	Township 3 north, range 10 east.	do.	15,900.96						7,087.82					22,988.78
12	Township 3 north, range 11 east.	do.	16,101.93						7,095.24					23,197.17
13	Township 4 north, range 9 east.	do.	23,787.99											23,787.99
14	Township 4 north, range 10 east.	do.	22,293.61						640.00					22,933.61
15	Township 4 north, range 11 east.	do.	19,106.32						4,080.00					23,186.32
16	Township 4 north, range 12 east.	do.	23,209.83											23,209.83
17	Township 5 north, range 9 east.	do.	12,050.54											24,500.43
18	Township 5 north, range 10 east.	do.	20,487.26	12,458.89					638.60					23,046.15
19	Township 5 north, range 11 east.	do.	22,893.35	1,917.93										24,811.28
20	Township 5 north, range 12 east.	do.	20,210.82								3,040.00			23,250.82
21	Township 6 north, range 7 east.	do.	9,120.00	13,980.38										23,100.38
22	Township 6 north, range 10 east.	do.	22,743.03	320.00										23,063.03
23	Township 6 north, range 13 east.	do.	22,899.98											22,899.98
24	Township 7 north, range 7 east.	do.	2,100.09	A.									A + river	23,020.00
25	Township 7 north, range 8 east.	do.	22,990.72											22,990.72
26	Township 7 north, range 9 east.	do.	23,028.59											23,028.59
27	Township 7 north, range 10 east.	do.	23,007.56											23,007.56
28	Township 8 north, range 9 east.	do.	23,541.51											23,541.51
29	Township 8 north, range 10 east.	do.	23,176.54											23,176.54
30	Township 9 north, range 4 east.	do.		606.00										23,176.54
31	Township 9 north, range 5 east.	do.	74.54	A.									A + river	23,176.54
32	Township 9 north, range 6 east.	do.	646.29	A.									A + river	23,176.54
33	Township 9 north, range 7 east.	do.	2,077.38	A.									A + river	23,176.54



[illegible]

*a* Townships returned per previous reports, the areas of which are changed by subsequent surveys or amendments.

E.—List of lands surveyed in California from June 30, 1870, to June 30, 1871—Continued.

No. of township surveyed.	Description.	Meridian.	Public land.		A.	B.	C.	D.	E.	F.	G.	Remarks.	Total.
			Acres.	Acres.	Confirmed private land claim.	Military reservation.	Indian reservation.	Unsurveyed mountain land.	River, swamp, and overflowed land.	Unsurveyed public land.	Mining claims.		
83	Township 9 north, range 10 west.	Mount Diablo.	17,576.38		5,490.00								Acres. 23,066.38
84	Township 11 north, range 4 west.	do	10,705.21					12,232.40			86.73		23,024.34
85	Township 11 north, range 5 west.	do	11,530.00					11,520.00					23,040.00
86	Township 12 north, range 8 west.	do	13,251.46						E			D + E	21,529.46
87	Township 12 north, range 1 west.	do	16,965.12						5,653.93				22,619.05
88	Township 12 north, range 8 west.	do	9,759.50					18,412.40					24,162.90
89	Township 13 north, range 8 west.	do	9,764.35					8,973.28					24,635.18
90	Township 13 north, range 1 west.	do	15,097.61						E			A + E	22,634.71
91	Township 19 north, range 13 west.	do	6,879.74		A			16,160.00					23,039.74
92	Township 21 north, range 6 west.	do	19,162.76					3,840.04					23,002.80
93	Township 23 north, range 6 west.	do	22,916.38										22,916.38
94	Township 24 north, range 6 west.	do	15,352.40					7,676.00					23,028.40
95	Township 25 north, range 6 west.	do	14,818.79					7,403.00					22,226.79
96	Township 2 south, range 2 east.	do	15,994.20		7,115.76								23,109.96
97	Township 2 south, range 3 east.	do	16,900.66		1,280.57								23,180.23
98	Township 3 south, range 1 east.	do	21,402.03		22,690.00								23,092.03
99	Township 3 south, range 2 east.	do	7,970.72		15,121.60								23,092.32
100	Township 3 south, range 3 east.	do	22,638.12		47.46								23,055.56
101	Township 3 south, range 5 east.	do	24,147.59										24,147.59
102	Township 4 south, range 5 east.	do	24,376.34										24,376.34
103	Township 4 south, range 6 east.	do	22,501.07		637.60								23,138.67
104	Township 5 south, range 4 east.	do	21,280.70										24,940.70
105	Township 5 south, range 5 east.	do	23,139.82							3,660.00			24,746.82
106	Township 5 south, range 6 east.	do	23,030.96							607.00			23,030.96
107	Township 5 south, range 7 east.	do	18,213.12		1,285.78			3,514.16					23,013.06
108	Township 7 south, range 10 east.	do	17,655.17						5,348.03				23,003.20
109	Township 7 south, range 25 east.	do	23,001.02										23,001.02
110	Township 16 south, range 26 east.	do	22,005.08										23,005.08
111	Township 16 south, range 27 east.	do	22,898.52										23,898.52
112	Township 16 south, range 28 east.	do	6,298.86					16,688.58					23,927.41
113	Township 17 south, range 20 east.	do	7,578.20						741.26				22,572.12
114	Township 17 south, range 21 east.	do	14,429.15		14,552.66				1,594.78				23,083.71
115	Township 17 south, range 22 east.	do	15,547.52		5,823.93				1,735.15			A + river	23,106.60

[illegible]

*a* Townships returned per previous reports, the areas of which are changed by subsequent surveys or amendments.



E.—List of lands surveyed in California from June 30, 1870, to June 30, 1871—Continued.

No. of township surveyed.	Description.	Meridian.	Public land.		A	B.	C.	D.	E.	F.	G.	Remarks.	Total.
			Acres.	Acres.	Confirmed private land claim.	Military reservation.	Indian reservation.	Unsurveyed mount-ain land.	River, swamp, and overflowed land.	Unsurveyed public land.	Mining claim.		
a	Township 3 south, range 3 east.	Mount Diablo	23,055.58	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	23,055.58
a	Township 3 south, range 5 east.	do	20,353.02	do	do	do	do	3,783.00	do	do	do	do	23,055.58
a	Township 4 south, range 6 east.	do	15,230.87	do	637.60	do	do	7,264.00	do	do	do	do	24,123.02
a	Township 5 south, range 7 east.	do	14,064.88	do	1,255.78	do	do	7,662.40	do	do	do	do	23,132.47
a	Township 7 south, range 10 east.	do	16,245.48	do	do	do	do	6,992.00	E.	F.	E + F	6,787.72	23,013.06
a	Township 16 south, range 25 east.	do	15,986.46	do	do	do	do	22,077.28	do	do	do	do	23,063.20
a	Township 16 south, range 26 east.	do	962.72	do	do	do	do	4,661.78	do	do	do	do	22,978.46
a	Township 17 south, range 20 east.	do	18,210.34	do	do	do	do	2,822.95	do	do	do	do	23,040.00
a	Township 17 south, range 21 east.	do	20,292.76	do	do	do	do	1,735.15	do	do	do	do	22,872.12
a	Township 17 south, range 22 east.	do	21,371.45	do	do	do	do	40.00	do	do	do	do	23,085.71
a	Township 17 south, range 26 east.	do	20,530.99	do	do	do	do	2,101.04	do	do	do	do	23,106.60
a	Township 17 south, range 27 east.	do	3,433.00	do	do	do	do	19,205.00	do	do	do	do	22,798.00
a	Township 18 south, range 27 east.	do	9,364.95	do	do	do	do	20,122.80	E.	D + E	do	do	22,672.03
a	Township 27 south, range 10 east.	do	2,887.20	do	do	do	do	6,160.00	do	A + D	do	do	23,345.28
a	Township 28 south, range 10 east.	do	14,200.42	do	A.	do	do	do	do	do	do	do	23,040.00
a	Township 4 south, range 1 west.	do	3,637.12	do	13,332.84	do	do	do	do	do	do	do	23,350.42
a	Township 6 south, range 1 west.	do	4,370.09	do	do	do	do	do	do	do	do	do	23,129.96
a	Township 7 south, range 2 west.	do	12,834.85	do	A.	do	do	do	do	do	do	do	15,988.09
a	Returned in previous reports.	do	471,636.26	do	22,718.85	2,563.92	do	153,313.71	17,647.69	19,873.00	do	184,515.50	23,039.00
Aggregate brought down			2,095,887.21	do	101,526.53	2,563.92	do	323,844.18	129,540.62	30,167.00	152.63	376,624.81	3,150,306.90
Returned in previous reports.			471,636.26	do	22,718.85	2,563.92	do	153,313.71	17,647.69	19,873.00	do	184,515.50	2,872,258.93
Aggregate			1,624,250.95	do	103,807.68	do	do	170,530.47	111,892.93	10,294.00	152.63	192,109.31	2,278,047.97

a Townships returned in previous reports, the areas of which are changed by subsequent surveys or amendments.

## RECAPITULATION.

Acres public land surveyed .....	1, 624, 260. 95
Acres as per column A .....	168, 807. 68
Acres as per column D .....	170, 530. 47
Acres as per column E .....	111, 892. 93
Acres as per column F .....	10, 294. 00
Acres as per column G .....	152. 63
Acres as per column remarks .....	192, 109. 31
Aggregate acres .....	2, 278, 047. 97

J. H. WILDS,  
Chief Draughtsman.

F.—Statement of plats made in the office of the surveyor general for California during the fiscal year 1870-'71.

Description.	Originals.	Department.	Register.	Court.	Skeleton plats.	Skeletons for deputies.	Total.
Plats of township lines .....	3. 0	3. 0	.....	.....	.....	. 7	6. 7
Plats of subdivision lines .....	15. 8	14. 7	12. 3	.....	.....	.....	42. 8
Plats of ranches .....	1. 2	4. 1	.....	.....	14. 4	.....	19. 7
Plats of mining claims. . . . .	1. 6	2. 6	2. 0	.....	.....	.....	6. 2
General maps .....	. 1	. 1	.....	.....	.....	.....	. 2
Aggregate .....	21. 7	24. 5	14. 3	.....	14. 4	. 7	75. 6

J. H. WILDES,  
Chief Draughtsman.

*Ch.—Statement of transcripts of field-notes of public surveys sent to the Department at Washington from the surveyor general's office for California, during the fiscal year of 1870-71.*

Name of deputy.	When sent.	Character of work.	Meridian.	Remarks.
John Wallace.....	July 5, 1870	Township 5 north, ranges 5 and 6 east.	Mount Diablo.....	Exterior and subdivision lines.
J. M. Ingalls.....	July 9, 1870	Townships 6, 7, 8, and 9 north, range 11 east.	do.....	Do.
I. N. Chapman.....	July 26, 1870	Township 9 north, ranges 2, 9, and 10 west.	do.....	Do.
George W. Schell.....	July 26, 1870	Townships 1 and 2 north, range 11 east.	do.....	Do.
	July 26, 1870	Township 1 north, range 12 east.	do.....	Do.
Alfred Banister.....	July 26, 1870	Township 5 south, range 7 east.	do.....	Do.
J. M. Ingalls.....	Aug. 10, 1870	Township 10 north, ranges 11 and 12 east.	do.....	Do.
G. H. Thompson.....	Aug. 12, 1870	Township 7 north, range 10 east.	do.....	Do.
W. W. Skinner.....	Aug. 16, 1870	Township 21 north, range 17 west.	do.....	Do.
W. F. Ingalls.....	Aug. 16, 1870	Township 10 south, ranges 3 and 4 west.	do.....	Do.
J. M. Ingalls.....	Oct. 1, 1870	Township 20 north, range 17 west.	do.....	Do.
	Oct. 1, 1870	Township 21 north, range 15 west.	do.....	Do.
R. R. Harris.....	Oct. 18, 1870	Townships 18 and 19 south, range 6 east.	do.....	Do.
S. B. Gilbert.....	Oct. 22, 1870	Township 6 south, range 5 west.	do.....	Do.
G. P. Ingalls.....	Nov. 8, 1870	Township 12 north, ranges 15 and 16 west.	do.....	Subdivision.
	Nov. 8, 1870	Township 14 north, ranges 15 and 16 west.	do.....	Exterior and subdivision lines.
Philip E. Drescher.....	Nov. 8, 1870	Township 13 north, range 16 west.	do.....	Do.
	Dec. 13, 1870	Township 14 north, range 3 east.	do.....	Subdivision.
W. H. Carlton.....	Dec. 19, 1870	Townships 11 and 13 north, range 3 east.	do.....	Do.
	Jan. 7, 1871	Township 28 north, ranges 5 and 6 east.	do.....	Exterior and subdivision lines.
J. G. Mather.....	Jan. 18, 1871	Township 29 north, ranges 5 and 6 east.	do.....	Do.
	Jan. 18, 1871	Township 4 north, ranges 9 and 10 east.	do.....	Do.
	Jan. 18, 1871	Township 5 north, ranges 9 and 10 east.	do.....	Do.
	Jan. 18, 1871	Township 6 north, range 10 east.	do.....	Do.
	Jan. 18, 1871	Township 7 north, ranges 8, 9, and 10 east.	do.....	Do.
	Jan. 18, 1871	Township 8 north, range 10 east.	do.....	Do.
	Jan. 18, 1871	Township 9 north, range 10 east.	do.....	Do.
	Jan. 18, 1871	Township 10 north, range 10 east.	do.....	Do.
D. D. Brown.....	Jan. 19, 1871	Township 26 north, ranges 9 and 10 east.	do.....	Do.
	Jan. 19, 1871	Township 27 north, range 9 east.	do.....	Do.
George W. Orth.....	Feb. 7, 1871	Township 16 south, ranges 25, 26, 27, and 28 east.	do.....	Do.
	Feb. 7, 1871	Township 17 south, ranges 26, 27, and 28 east.	do.....	Do.
	Feb. 7, 1871	Township 18 south, ranges 27 and 28 east.	do.....	Do.
W. J. Lewis.....	Feb. 8, 1871	Township 2 south, ranges 1 and 2 west.	do.....	Do.
John Reed.....	Feb. 13, 1871	Township 7 south, range 2 west.	do.....	Do.
E. W. Brown.....	Feb. 21, 1871	Township 15 south, range 6 east.	do.....	Subdivision.
A. B. Beauvais.....	Feb. 24, 1871	Township 1 north, ranges 13, 14, and 15 east.	do.....	Exterior and subdivision lines.
	Feb. 25, 1871	Township 2 north, ranges 13, 14, and 15 east.	do.....	Do.
Alfred Banister.....	Mar. 2, 1871	Township 3 north, ranges 9, 10, and 11 east.	do.....	Subdivision.
Holman & Swayne.....	Mar. 18, 1871	Extension of the Mount Diablo meridian.	do.....	Do.
I. N. Chapman.....	Mar. 20, 1871	Township 21 north, range 13 west.	do.....	Do.
A. W. Keddle.....	Mar. 22, 1871	Fourth standard north.	do.....	Islands in Clear Lake and connecting lines.
I. N. Chapman.....	Mar. 25, 1871	Township 13 north, ranges 7 and 8 west.	do.....	Do.



H. F. Terry.....	Mar. 28, 1871	Township 14 north, range 7 west.....	do.....	Do.
J. G. Mathier.....	Mar. 28, 1871	Townships 4 and 5 north, range 11 east.....	do.....	Exterior and subdivision lines.
J. S. Murray.....	Mar. 28, 1871	Townships 4 and 5 north, range 12 east.....	do.....	Do.
E. H. Dyer.....	April 3, 1871	Townships 14 and 15 north, range 8 east.....	do.....	Do.
H. F. Terry.....	April 3, 1871	Township 16 north, range 15 east.....	do.....	Do.
W. M. Johnson.....	April 4, 1871	Township 1 north, ranges 1 and 2 east.....	Humboldt.....	Do.
Holman & Swayne.....	April 4, 1871	Township 1 north, range 2 east.....	do.....	Do.
John C. Partridge.....	May 4, 1871	Townships 2 and 3 south, range 2 east.....	Mount Diablo.....	Do.
W. F. Ingalls.....	May 15, 1871	Township 6 north, range 13 east.....	do.....	Do.
	May 16, 1871	Township 19 north, range 1 west.....	do.....	Do.
	June 24, 1871	Extension of the Mount Diablo meridian.....	do.....	Do.
	June 26, 1871	Extension of the seventh standard north.....	do.....	Exterior and subdivision lines.
	June 26, 1871	Townships 31, 32, and 33 north, range 12 east.....	do.....	Do.
	June 26, 1871	Township 32 north, range 13 east.....	do.....	Do.
	June 26, 1871	Townships 37 and 38 north, range 11 east.....	do.....	Do.
	June 26, 1871	Township 37 north, range 10 east.....	do.....	Do.
	June 30, 1871	Townships 11, 12, and 13 north, range 11 east.....	do.....	Do.

J. R. HARDENBERGH,  
*United States Surveyor General for California.*

H.—Statement of descriptive notes, decrees of court, &c., of private land claims, to accompany plats for patent, compiled for transmission to the Department at Washington, during the fiscal year 1870-71.

When sent.	Nature of works.	Name of claim.	To whom confirmed.	Original.	Department.
July 2, 1870	Plat, decrees, opinion, and field-notes.	Boca de la Playa.	Emigdio Vajar.	1	1
July 5, 1870	do	El Cajon.	T. W. Southerland, guardian of the minor children of Miguel Pedorena.	1	1
July 5, 1870	Descriptive notes, decrees, and opinion.	Cañada de los Coches.	Anacleto Estrade.	1	1
July 7, 1870	Plat, decrees, descriptive notes, and opinion.	Milpitas.	José Maria Alvizo.	1	1
July 8, 1870	do	San Antonio ó Rodeo de las Anguas.	Maria Rita Baldez.	1	1
July 11, 1870	do	Lomas de la Purificación.	Antonio Yanseno.	1	1
July 13, 1870	do	Los Laureles.	Leander Ransom.	1	1
July 26, 1870	do	Monescate.	Ysidro Mario Alvarado.	1	1
Aug. 3, 1870	Plat, decrees, field-notes, and opinion.	Cañada Larga ó Verde.	Joaquina Alvarado.	1	1
Aug. 4, 1870	Plat, decrees, descriptive notes, and opinion.	Las Posas.	José do la Guerra y Noriega.	1	1
Aug. 6, 1870	Plat, decrees, field-notes, and opinion.	Mission San Buenaventura.	M. A. Rodriguez de Poli.	1	1
Aug. 13, 1870	do	Cucamonga.	Leon Victor Prudhomme.	1	1
Aug. 18, 1870	Plat, decrees, descriptive notes, and opinion.	San Julian.	José de la Guerra y Noriega.	1	1
Sept. 14, 1870	Plat, decrees, field-notes, and opinion.	Santa Rita.	José Ramon Malo.	1	1
Oct. 1, 1870	Opinion and certificates.	Chualar.	Mariano Malarian, atty.	1	1
Oct. 23, 1870	Plat, decrees, descriptive notes, and opinion.	Canada Paula y Saticoy.	John P. Davidson et al.	1	1
Nov. 3, 1870	do	Canada de San Vicente y Mesa del Padre Barona.	Domingo Yorba.	1	1
Nov. 10, 1870	do	Island of Santa Rosa.	Mancilla Carrillo de Jones.	1	1
Nov. 10, 1870	do	La Carbonera.	William Boele.	1	1
Nov. 21, 1870	do	Las Cienegas.	Juanario Abila et al.		
Nov. 28, 1870	do	Santa Rosa.	Maria Jesus Olivera de Cota et al.		
Dec. 13, 1870	do	Tract near San Gabriel.	Rafaela Valenzuela et al.		
Dec. 14, 1870	do	Tract near San Gabriel, (500 varas).	Daniel Sexton.		
Dec. 16, 1870	do	Tract near San Gabriel, (1,000 varas).	Daniel Sexton.		
Dec. 23, 1870	do	Tract in Santa Clara County.	Mary S. Bennett.		
Dec. 31, 1870	do	Tract near San Gabriel.	José Ledesma.		
Jan. 4, 1871	do	Tract near San Gabriel.	Francisco Sales.		
Jan. 9, 1871	do	Tract near San Felipe.	José Domingo.		
Jan. 14, 1871	do	Bolsa de San Felipe.	Francisco Perez Pacheco.		
Jan. 21, 1871	Plat, decrees, field-notes, and opinion.	Todos Santos y San Antonio.	Guillermo Eduardo Hartwell.		
Jan. 21, 1871	Plat, decrees, descriptive notes, and opinion.	Ex-Mission de San Fernando.	Eulogio de Celis.		
Jan. 25, 1871	do	El Encino.	Vicente de la Orsa et al.		
Jan. 28, 1871	do	Tract near San Gabriel.	Michael White.		
Jan. 28, 1871	do	Otay.	Victoria Dominguez.		
Jan. 28, 1871	do	Parma.	José A. Serrano et al.		
Feb. 8, 1871	do	El Niguel.	Juan Abila et al.		
Feb. 14, 1871	do	Guaymore.	Andres et al.		
Feb. 14, 1871	do	Canada de San Miguellito.	Juana Tico de Rodriguez et al.		

Feb. 14, 1871	.....do.....	San Rafael.....	Julio Berdugo <i>et al.</i> .....	.....
Feb. 15, 1871	Plat, decrees, field-notes, and opinion	Buena Vista.....	Jesus Machado.....	.....
Mar. 7, 1871	Plat, decrees, descriptive notes, and opinion	Piedra Blanca.....	José de Jesus Pico.....	.....
Mar. 13, 1871	.....do.....	Valle de Pano, or Santa Maria.....	José J. Ortega <i>et al.</i> .....	.....
Mar. 13, 1871	.....do.....	Rincon de los Esteros.....	Rafael Alviso <i>et al.</i> .....	.....
Mar. 24, 1871	.....do.....	Temescal.....	Ramon de la Cuesta and F. G. Camino.....	.....
April 6, 1871	.....do.....	La Sierra.....	Bernardo Yorba.....	.....
April 7, 1871	Tracing decrees, and compiled field-notes	Bolsa Nuevo y Mora Cojo.....	Maria Antonio Pico de Castro.....	.....
April 8, 1871	Skeleton plats and certificate of advertisement.	La Merced.....	F. P. F. Temple <i>et al.</i> .....	1
April 8, 1871	.....do.....	Puerto de Felipe Lugo.....	George Morillo <i>et al.</i> .....	1
April 8, 1871	Plat, decrees, descriptive notes, and opinion	Los Vallecitos de San Marcos.....	Lorenzo Soto.....	1
April 20, 1871	Plat, decrees, field-notes, and opinion	Cuyamaca.....	Augustin Olivera.....	1
May 1, 1871	Skeleton plats and certificate of advertisement.	Canada de los Ahisos.....	José Serrano.....	1
May 8, 1871	Plat, decrees, field-notes, and opinion	Caslamayomi.....	William Forbes.....	1
May 13, 1871	.....do.....	San Miquelito.....	Miguel Avila.....	1
May 13, 1871	.....do.....	Santa Ysabel.....	J. J. Ortego and Edward Stoko.....	1

J. R. HARDENBERGH,  
*United States Surveyor General for California.*



## I.—Statement of account of appropriation for the survey of public land in California during the fiscal year 1870-'71.

Date of account.	In favor of—	Date of contract.	Amount.	Date.	On account of—	Amount.
1870. Dec. 13	Philip E. Drescher..	July 30, 1870	\$40 00		By appropriation of July 15, 1870.	\$50,000 00
1871. Jan. 7	William H. Carlton.	Sept. 2, 1870	1,381 78			
Jan. 18	James G. Mather....	Jan. 16, 1871	1,744 26			
Feb. 8	William J. Lewis ...	Sept. 19, 1870	918 58			
Feb. 13	Elijah W. Brown....	Sept. 28, 1870	468 00			
Mar. 2	Alfred Bannister....	July 15, 1870	808 85			
Mar. 18	Holman & Swayne...	July 23, 1870	324 90			
Mar. 20	Isaac N. Chapman ..	Oct. 18, 1870	233 98			
May 15	Henry F. Terry.....	Nov. 12, 1870	748 49			
May 15	William H. Carlton.	Jan. 15, 1871	300 00			
June 19	John Partridge.....	Oct. 14, 1870	1,774 03			
June 24	Holman & Swayne...	Sept. 3, 1870	1,116 00			
June 29	James G. Mather....	Oct. 24, 1870	2,900 00			
June 29	John M. Ingalls.....	Sept. 23, 1870	1,632 38			
June 29	Wilfred F. Ingalls ..	Sept. 20, 1870	2,586 00			
July 20	George W. Schell....	Oct. 1, 1870	598 92			
Aug. 7	Denton D. Brown....	Dec. 12, 1870	1,893 13			
Aug. 18	Joseph J. Cloud ....	Sept. 16, 1870	4,000 00			
Aug. 31	Henry F. Terry.....	Jan. 12, 1871	764 96			
	Balance of appropriation applica- ble to contracts made previous to June 30, 1871.		25,765 74			
			50,000 00			50,000 00
				1871-'72	By balance of appro- priation of July 15, 1870, applicable to contracts made pre- vious to June 30, 1871.	25,765 74

J. R. HARDENBERGH,  
United States Surveyor General for California.

Name of depositor.	Date of deposit.	Amount of deposit.	Amount of account.	Name of deputy.	Location of work.	Remarks.
W. F. Goad.....	July 20, 1870.....	\$640 00	\$810 33	W. M. Johnson.....	Township 19 north, range 1 west, Mount Diablo meridian.....	Surveyed.
W. F. Goad.....	July 29, 1870.....	672 00		E. J. Edwards.....	Township 16 north, range 5 west, Mount Diablo meridian.....	Do.
W. F. Goad.....	July 29, 1870.....	55 00		E. J. Edwards.....	Township 17 north, range 4 west, Mount Diablo meridian.....	Do.
W. F. Goad.....	July 29, 1870.....	170 00		E. J. Edwards.....	Township 16 north, range 4 west, Mount Diablo meridian.....	Do.
W. H. Boyce.....	Nov. 4, 1870.....	213 00	90 91	John Reed.....	Township 7 south, range 2 west, Mount Diablo meridian.....	Do.
Franklin Martin.....	Nov. 18, 1870.....	90 00		S. W. Smith.....	Township 13 south, range 5 east, Mount Diablo meridian.....	Do.
M. D. Markley.....	Nov. 26, 1870.....	310 00		T. J. Dewdney.....	Township 8 south, range 2 west, Mount Diablo meridian.....	Do.
Henry Miller.....	Nov. 31, 1870.....	539 50		John Reed.....	Township 28 south, range 19 east, Mount Diablo meridian.....	Do.
W. R. Standefer.....	Dec. 31, 1870.....	200 00		J. Goldsworthy.....	Township 2 south, range 1 west, San Bernardino meridian.....	Do.
W. R. Standefer.....	Dec. 31, 1870.....	180 00		J. Goldsworthy.....	Township 2 south, range 2 west, San Bernardino meridian.....	Do.
John Hancock.....	Dec. 31, 1870.....	300 00		J. W. McKany.....	Township 1 south, range 14 west, San Bernardino meridian.....	Do.
M. Klinger and J. H. Hester.....	Feb. 2, 1871.....	185 00		J. W. McKany.....	Township 6 north, range 6 west, Mount Diablo meridian.....	Do.
D. W. Spear.....	Feb. 1, 1871.....	40 00		E. C. Uren.....	Town site of Alta.....	Do.
E. M. Barnard.....	Feb. 11, 1871.....	50 00		E. C. Uren.....	Town site of Alta.....	Do.
Franceska Blanchard.....	Mar. 16, 1871.....	168 00		Gustavus Cox.....	Township 8 north, range 13 west, Mount Diablo meridian.....	Do.
James Banester.....	May 1, 1871.....	200 00	454 25	J. N. Chapman.....	Township 11 north, range 5 west, Mount Diablo meridian.....	Do.
Isaac E. Barnes.....	May 1, 1871.....	209 00		J. N. Chapman.....	Township 11 north, range 5 west, Mount Diablo meridian.....	Do.
William Thompson.....	May 1, 1871.....	45 00		J. N. Chapman.....	Township 11 north, range 5 west, Mount Diablo meridian.....	Do.
George Crossman.....	May 12, 1871.....	125 00		W. S. Powell.....	Township 21 south, range 22 east, Mount Diablo meridian.....	Do.
J. M. Gulp.....	May 23, 1871.....	174 00		D. D. Brown.....	Township 16 north, range 2 west, Mount Diablo meridian.....	Do.
A. S. Gulp.....	May 24, 1871.....	173 00		D. D. Brown.....	Township 16 north, range 2 west, Mount Diablo meridian.....	Do.
John Cheeny.....	May 29, 1871.....	173 00		D. D. Brown.....	Township 16 north, range 2 west, Mount Diablo meridian.....	Do.
C. Rueker.....	June 1, 1871.....	180 00		J. N. Chapman.....	Township 10 north, range 5 west, Mount Diablo meridian.....	Do.
W. Meyer.....	June 1, 1871.....	180 00		J. N. Chapman.....	Township 10 north, range 5 west, Mount Diablo meridian.....	Do.
Mrs. V. Dunnegan.....	June 1, 1871.....	90 00		J. N. Chapman.....	Township 10 north, range 5 west, Mount Diablo meridian.....	Do.
O. V. P. Day.....	June 1, 1871.....	90 00		J. N. Chapman.....	Simms' Island, in township 1 north, range 6 west, Mount Diablo meridian.....	Do.
G. Ulrich.....	June 1, 1871.....	90 00		G. F. Allardt.....	Township 9 south, range 1 east, Mount Diablo meridian.....	Do.
John Simms.....	June 6, 1871.....	25 00		J. H. Piper.....	Township 9 south, range 1 east, Mount Diablo meridian.....	Do.
A. Delmas.....	June 7, 1871.....	267 00		J. H. Piper.....	Township 9 south, range 1 east, Mount Diablo meridian.....	Do.
Lewis Champion.....	June 7, 1871.....	267 00		J. H. Piper.....	Township 9 south, range 1 east, Mount Diablo meridian.....	Do.
Frederick Creighton.....	June 7, 1871.....	266 00		J. H. Piper.....	Township 9 south, range 1 east, Mount Diablo meridian.....	Do.
J. C. Crocker.....	June 16, 1871.....	40 00		John Reed.....	Township 28 south, range 29 east, Mount Diablo meridian.....	Do.
Joseph Wilson.....	June 16, 1871.....	210 00		John Reed.....	Township 30 south, range 30 east, Mount Diablo meridian.....	Do.
M. S. Crocker.....	June 16, 1871.....	200 00		John Reed.....	Township 30 south, range 30 east, Mount Diablo meridian.....	Do.
Joseph Queraro.....	June 20, 1871.....	188 00		John Reed.....	Township 30 south, range 32 east, Mount Diablo meridian.....	Do.
J. M. Garther.....	June 25, 1871.....	472 00		D. D. Brown.....	Township 16 north, range 6 west, Mount Diablo meridian.....	Do.
S. R. Simmons.....	June 28, 1871.....	200 00		D. D. Brown.....	Township 16 north, range 6 west, Mount Diablo meridian.....	Do.

J. R. HARDENBERGH,  
United States Surveyor General for California.

K.—Statement of special deposits for the survey of mining claims in California during the fiscal year 1870-'71.

Name of depositor.	Date of deposit.	Amount of deposit.				Name of deputy.	Location of work.	Remarks.
		Surveyors.	Salaries.	Total.	Account.			
George B. Blanding.....	Sept. 19, 1870	\$70	\$60	\$130	\$70	J. M. Anderson.....	Greenwood mine.....	
D. W. Williams.....	Sept. 14, 1870	35	.....	35	.....	A. B. Beauvais.....	Crystalline mine.....	
Nevada Quartz Mining Company.	Nov. 7, 1870	65	65	130	.....	J. G. Mather.....	Nevada quartz mine.....	
Davidson Quartz Mining Company.	Nov. 16, 1870	70	65	135	70	J. M. Anderson.....	Davidson quartz mine.....	
Phoenix Mining Company.....	Oct. 4, 1870	35	25	60	35	T. J. Dewoody.....	Phoenix mine.....	
Rock River Mining Company.....	Dec. 3, 1870	70	50	120	70	D. D. Brown.....	Rock River quartz mine.....	
Pond & Co.....	Jan. 9, 1871	70	50	120	.....	E. C. Uren.....	Pond & Co.'s claim.....	
Henry Dorr.....	Jan. 21, 1871	60	45	105	.....	do.....	Dorr's claim.....	
Spring Hill Mining Company.....	Feb. 15, 1871	65	65	130	65	J. G. Mateer.....	Spring Hill mine.....	
R. M. Bridges, attorney.....	Mar. 15, 1871	65	65	130	.....	W. L. McKim.....	Kennedy mine.....	
John Parrott.....	Apr. 1, 1871	.....	.....	.....	.....	D. D. Brown.....	Rough and Ready quartz claim.....	
A. Delano.....	Apr. 4, 1871	.....	65	65	.....	do.....	Europe quartz claim, Plumas County.....	
Farley & Pawling.....	Apr. 3, 1871	65	65	130	.....	Henry S. Bradley.....	New York Hill mine.....	
Farley & Pawling.....	Apr. 17, 1871	65	65	130	.....	W. L. McKim.....	Lincoln mine.....	
Pioneer Chief Gold and Silver Mining Company.	Apr. 17, 1871	65	65	130	.....	do.....	Zeile mine.....	
Oncida Mining Company.....	Apr. 21, 1871	65	65	130	.....	Henry F. Terry.....	Pioneer Chief gold and silver mine.....	
W. W. Cozzens.....	Apr. 26, 1871	.....	65	65	65	W. L. McKim.....	Oncida mine.....	
Knex, White, Attkens & Cozzens.	Apr. 26, 1871	.....	195	195	.....	Henry S. Bradley.....	Cozzens's placer claim.....	
Maxwell Mining Company.....	Apr. 27, 1871	65	65	130	.....	do.....	1, Little York; 2 upper and lower parts of Lower Christmas Hill; 3, Upper Christmas Hill; and 4, Liberty Hill claim.	
Amadore Mining Company.....	Apr. 27, 1871	65	65	130	130	W. L. McKim.....	Maxwell mine.....	
Slate Ledge Quartz Mining Company.	May 3, 1871	65	65	.....	130	Henry S. Bradley.....	Amadore mine.....	
Orrel J. Wolcott.....	May 9, 1871	65	65	.....	65	do.....	Slate Ledge mine.....	
Hancock & Tibbits.....	May 24, 1871	.....	65	.....	130	Henry F. Terry.....	Wolcott placer claim.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	W. L. McKim.....	Hancock & Tibbits's mine.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	do.....	Bine Jacket mine.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	do.....	Southeast gold quartz mine.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	do.....	Dry Creek gold quartz mine.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	do.....	Aden & Simpson gold quartz mine.....	
Otto Walther.....	June 6, 1871	.....	65	.....	65	do.....	Fort John gold quartz mine.....	
Pioneer Gold and Silver Mining Company.	June 16, 1871	65	65	.....	130	F. J. Laxe.....	Socrates quicksilver mine.....	
						W. L. McKim.....	Pioneer gold and silver mine.....	

Surveyed without cost to U. S.  
Do.

Do.

Do.

Do.

Do.

Do.

Do.

Do.

Do.

Do.



J. R. HARDENBERGH,  
United States Surveyor General for California.

L.—Account of appropriation for the salary of surveyor general for California for the fiscal year ending June 30, 1870.

Dr.		July 12, 1870	Cr.
	To account of S. Day for first quarter.....	\$750 00	
Sept. 30, 1870	To account of S. Day for second quarter.....	750 00	
Dec. 31, 1870	To account of S. Day for third quarter.....	391 66	
Feb. 16, 1871	To account of J. R. Hardenbergh for third quarter.....	358 34	
Mar. 31, 1871	To account of J. R. Hardenbergh for fourth quarter.....	750 00	
June 30, 1871			By appropriation for salary of surveyor general for California.....
			\$3,000 00

J. R. HARDENBERGH,  
United States Surveyor General for California.

Keystone Consolidated Gold Mining Company.	June 21, 1871	65	do	Keystone mine.....	Do.
Keystone Consolidated Gold Mining Company.	June 21, 1871	65	do	Spring Hill and Geneva mine.....	Do.
Original Anadore Gold Mining Company.	June 21, 1871	65	do	Original Anadore mine.....	Do.
Bunker Hill Quartz Mining Company.	June 21, 1871	65	do	Bunker Hill mine.....	Do.
Wales L. Palmer.....	June 21, 1871	65	do	Mayflower mine.....	Do.
Railroad Mining Company...	June 22, 1871	130	do	Railroad mine.....	Do.

M.—Statement of special individual deposits for compensation of clerks and draughtsmen in office of United States surveyor general for California during the fiscal year 1870-'71, deposited with assistant treasurer of United States at San Francisco, as per certificates on file in this office.

Date of deposit.	Name of depositor.	Location of survey.	Meridian.	Amount of deposit.
July 20, 1870	W. F. Goud .....	Township 19 north, range 1 west.	Mount Diablo ..	\$90 00
July 29, 1870	W. F. Goud .....	Township 16 north, range 5 west.	do .....	65 00
July 29, 1870	W. F. Goud .....	Township 17 north, range 4 west.	do .....	20 00
July 29, 1870	W. F. Goud .....	Township 16 north, range 4 west.	do .....	40 00
Nov. 4, 1870	W. H. Bovee .....	Township 7 south, range 2 west.	do .....	49 00
Nov. 18, 1870	Franklin Martin .....	Township 13 south, range 5 east.	do .....	50 00
Nov. 26, 1870	M. D. Markley .....	Township 8 north, range 2 west.	do .....	60 00
Nov. 29, 1870	Henry Miller .....	Township 28 south, range 19 east.	do .....	50 00
Dec. 31, 1870	W. R. Standefer .....	Township 2 south, range 1 west.	San Bernardino ..	50 00
Dec. 31, 1870	W. R. Standefer .....	Township 2 south, range 2 west.	do .....	65 00
Dec. 31, 1870	John Hancock .....	Township 1 south, range 14 west.	do .....	65 00
Feb. 2, 1871	Klinger & Hester .....	Township 6 north, range 2 west.	Mount Diablo ..	65 00
Feb. 1, 1871	D. W. Spear .....	Town of Dutch Flat .....	do .....	40 00
Feb. 11, 1871	E. M. Barnard .....	Town site of Alta .....	do .....	40 00
Mar. 16, 1871	Franzeska Blanchard .....	Township 8 north, range 13 west.	Mount Diablo ..	65 00
May 1, 1871	J. Banester <i>et al</i> .....	Township 11 north, range 5 west.	do .....	65 00
May 12, 1871	George Crozzman .....	Township 21 south, range 22 east.	do .....	75 00
May 29, 1871	J. M. Gulp <i>et al</i> .....	Township 16 north, range 2 west.	do .....	65 00
June 1, 1871	C. Rucker <i>et al</i> .....	Township 10 north, range 5 west.	do .....	70 00
June 6, 1871	John Simms .....	Simms's Island, in township 1 north, range 6 west.	do .....	25 00
June 7, 1871	A. Delmas <i>et al</i> .....	Township 9 south, range 1 east.	do .....	65 00
June 16, 1871	J. C. Crocker .....	Township 28 south, range 20 east.	do .....	30 00
June 16, 1871	Wilson & Crocker .....	Township 30 south, range 20 east.	do .....	65 00
June 20, 1871	Joseph Querabo .....	Township 30 south, range 22 east.	do .....	40 00
June 28, 1871	J. M. Garther .....	Township 16 north, range 6 west.	do .....	100 00
Total amount deposited for office-work on public land survey .....				1,405 00
Sept. 19, 1870	George B. Blanding ..	Greenwood mine .....		60 00
Nov. 7, 1870	Nevada Quartz Mining Company.	Nevada quartz mine .....		65 00
Nov. 16, 1870	Davidson Quartz Mining Company.	Davidson quartz mine .....		65 00
Oct. 4, 1870	Phenix Mining Company.	Phenix mine .....		25 00
Dec. 3, 1870	Rock River Quartz Mining Company.	Rock River quartz mine .....		50 00
Jan. 9, 1871	Pond & Co .....	Pond & Co.'s mine .....		50 00
Jan. 21, 1871	Henry Dorr .....	Dorr claim .....		45 00
Feb. 15, 1871	Spring Hill Mining Company.	Spring Hill mine .....		65 00
Mar. 15, 1871	R. M. Briggs, attorney.	Kennedy mine .....		65 00
April 4, 1871	John Parrott .....	Rough and Ready quartz claim .....		65 00
April 4, 1871	John Parrott .....	Eureka quartz claim, Plumas County.		65 00
April 5, 1871	A. Delano .....	New York Hill mine .....		65 00
April 17, 1871	Farley & Pawling .....	Lincoln mine .....		65 00
April 17, 1871	Farley & Pawling .....	Zeile mine .....		65 00
April 17, 1871	Pioneer Chief Mining Company.	Pioneer Chief gold and silver mine.		65 00
April 21, 1871	Oneida Mining Comp'y	Oneida mine .....		65 00
April 26, 1871	W. W. Cozzens .....	Cozzens's placer claims .....		65 00
April 26, 1871	Knox White <i>et al</i> .....	Little York claims .....		195 00
April 27, 1871	Maxwell Mining Company.	Maxwell mine .....		65 00
April 27, 1871	Amadore Mining Company.	Amadore mine .....		65 00
May 3, 1871	State Ledge Mining Company.	Slate Ledge mine .....		65 00
May 3, 1871	O. J. Wolcott .....	Wolcott placer claim .....		65 00
May 9, 1871	Hancock & Tibbits .....	Hancock & Tibbits's mine .....		65 00
May 24, 1871	W. S. Dunning .....	Blue Jacket mine .....		65 00
June 6, 1871	Otto Walther .....	Southerland gold quartz mine .....		65 00
June 6, 1871	Otto Walther .....	Dry Creek gold quartz mine .....		65 00
June 6, 1871	Otto Walther .....	Aden & Simpson, gold quartz mine.		65 00
June 6, 1871	Otto Walther .....	Fort John gold quartz mine .....		65 00
June 6, 1871	Otto Walther .....	Socrates quicksilver mine .....		65 00
June 16, 1871	Pioneer Gold and Silver Mining Company.	Pioneer gold and silver mine .....		65 00
June 21, 1871	Keystone Consolidated Mining Company.	Keystone mine .....		65 00
June 21, 1871	Keystone Consolidated Mining Company.	Spring Hill and Geneva mine .....		65 00
June 21, 1871	Original Amadore Mining Company.	Original Amadore mines .....		65 00

## M.—Statement of special individual deposits for compensation, &amp;c.—Continued.

Date of deposit.	Name of depositor.	Location of survey.	Meridian.	Amount of deposit.
June 21, 1871	Bunker Hill Gold Mining Company.	Bunker Hill mine .....		\$65 00
June 21, 1871	Wales L. Palmer .....	Mayflower mine .....		65 65
June 22, 1871	Railroad Mining Company.	Railroad mine .....		65 00
Total amount deposited for office work on mining surveys .....				2,375 00
Total amount deposited during the year .....				3,760 00
Balance July 23, 1870, as per Commissioner's letter, dated Aug. 3, 1870. ....				1,824 23
Grand total June 30, 1871 .....				5,604 23

J. R. HARDENBERGH,  
United States Surveyor General for California.

## N.—Statement of account of appropriation for compensation of clerks and draughtsman in office of the United States surveyor general for California, for the fiscal year ending June 30, 1871.

DR.				CR.
Sept. 30, 1870	To amount paid clerks and draughtsman: For first quarter ending September 30, 1870.	\$3,690 75	By appropriation of July 12, 1870, as advised by Commissioner's letter dated August 3, 1870.	\$11,000 00
Dec. 31, 1870	For second quarter ending December 31, 1870.	2,860 87	By deficiency appropriation of April 20, 1871, as advised by Commissioner's letter, dated April 28, 1871.	2,600 00
Mar. 31, 1871	For third quarter ending March 31, 1871.	2,590 00		
June 30, 1871	For fourth quarter ending June 30, 1871.	4,454 40		
	Total .....	13,596 02	Total .....	13,600 00
			By appropriation of March 3, 1871, for fiscal year ending June 30, 1872, as advised by Commissioner's letter dated April 28, 1871.	\$11,000 00

J. R. HARDENBERGH,  
United States Surveyor General for California.

## O.—Statement of account of appropriation for office rent, stationery, pay of messenger, and incidental expenses of the United States surveyor general's office for California, for the fiscal year ending June 30, 1871.

DR.				CR.
1870. Sept. 30	To amount paid in July, August, and September, first quarter.	\$1,050 22	By appropriation by act of July 15, 1870, for the fiscal year ending June 30, 1871.	\$4,000 00
1871. Dec. 31	To amount paid in October, November, and December, second quarter.	1,169 28		
Mar. 31	To amount paid in January, February, and March, third quarter.	1,105 87		
June 30	To amount paid in April, May, and June, fourth quarter.	671 25		
	Total .....	3,995 62	1871. June 30	Total .....
			By appropriation by act of March 3, 1871, for the fiscal year ending June 30, 1872.	4,000 00
				7,000 00

J. R. HARDENBERGH,  
United States Surveyor General for California.



*P.—Estimate for the surveying service in the district of California for the fiscal year ending June 30, 1873.*

For surveying extensions of meridian, standard parallels, township exteriors, and subdivision lines.....	\$100,000 00
For rent of office, stationery, fuel, lights, wages of messenger, instruments, and other incidental expenses.....	7,000 00
For compensation of surveyor general.....	3,000 00
For compensation of clerks and draughtsmen in the office of the surveyor general for work on public surveys.....	15,600 00
For compensation of clerks and draughtsmen in the office of the surveyor general for work on mining surveys.....	5,600 00
	<hr/>
	131,200 00
	<hr/>

J. R. HARDENBERGH,  
*United States Surveyor General for California.*

*O.—Report of the surveyor general of Oregon.*

SURVEYOR GENERAL'S OFFICE,  
*Oregon City, September, 1871.*

SIR: I herewith transmit the following tabular statements, showing the business of this office for the fiscal year ending June 30, 1871, together with a diagram map of this district:

- A.—Shows contracts acted upon during the fiscal year ending June 30, 1871.
- B.—Original plats of public surveys, and copies transmitted during fiscal year ending June 30, 1871.
- C.—Townships surveyed since June, 1870, with area of public lands.
- D.—Salaries paid surveyor general and clerks for fiscal year ending June 30, 1871.
- E.—Estimate of surveying and office expenses for fiscal year ending June 30, 1873.
- F.—Statement of incidental expenses for fiscal year ending June 30, 1871.

The greater part of the surveys made under the appropriation for the fiscal year ending June 30, 1871, were made along the line of the various military roads extending through the State east and west. These companies have been very urgent in their applications for surveys; much of their land yet remains unsurveyed.

A small contract was entered into March 7, 1870, with James Aiken, for surveys in the vicinity of Coos Bay, which appears in the last annual report as work not yet entered upon; in the tabular statement herewith transmitted the same contract appears as canceled, while, in fact, a considerable portion of the contract has been worked up by Deputy James Aiken under his contract, and the original field-notes are now on file in this office, not yet critically examined and approved, the work having been done prior to receiving notice of cancellation.

In letting the contracts, upon which no returns have been made, care has been had to contract for such work as would best meet the wants of settlements made in advance of the surveys.

In the vicinity of Astoria, and reaching from thence southward to the Tualitin Plains, there is a district of country heavily timbered and somewhat mountainous, yet it is fast being settled up; the lands are valuable for the timber as well as for agriculture. Through this part of the State a railroad is being constructed, as provided for by act of Congress approved May 4, 1870. Twenty miles of this road, reaching from Portland westward, will be completed by the 1st day of January next.

Along the foot-hills, and even upon the mountain-sides of the Cascade and Coast ranges, and along the coast throughout the entire length of the State north and south, the hardy pioneers are finding their way miles beyond the present surveyed limits, all clamorous for surveys. This is especially true in Coos and Curry Counties. Here are settlements that have been made ten or twelve years, with no means of obtaining titles to their lands, beyond a squatter's right, to protect them in their homes made amid the trials and privations of a frontier life. The lands are heavily timbered and broken, yet possessing many of the elements of wealth.

Extensive coal-beds are being developed. The lumber trade has been of considerable importance for several years. More recently considerable attention has been paid to agriculture, it having been found that lands cleared of this dense forest produce vegetables and grapes in abundance, and in many places the small grains and fruits do well.

In view of these facts, surveys should be extended along the coast and on each side of the Willamette, Umpqua, and Rogue River Valleys as fast as practicable. Through these valleys the Oregon and California Railroad is being rapidly constructed; one hundred and eighty miles by the 1st day of January next will be completed.

Settlements have been made in the Goose Lake country, near the line between Oregon and California; also on Jordan Creek, a tributary of the Owyhee, coming in from the east, there is quite a settlement, many of the settlers having resided upon their claims since 1864.

In northeastern Oregon, on the waters of the Grande Ronde, Powder, and Burnt Rivers, extensive settlements have been made. Surveys, consequently, should be made in each of these localities at an early day; also along the lines of the several military wagon roads.

In making up my estimate for surveying and office expenses during the fiscal year ending June 30, 1873, I have borne in mind the necessity of making the estimates as low as a prudent regard for the future of this State would warrant. In view of the many demands upon the General Government, growing out of the late civil war, every department of the Government should see to it that no unnecessary or extravagant demands are made, yet there are times and instances which demand prompt action and a liberal policy.

Already settlements have in very many places gone beyond the surveyed districts; some of them have been established for years. The tide of immigration is flowing in upon us in greatly increased numbers; our valleys, hills, and mountains are fast being settled.

It is but natural that settlers upon unsurveyed lands should anxiously await the surveys, more especially since, by the action of the Government, half of the lands in large districts are made the property of corporations, for the purposes of internal improvements; in every case, with one exception, without restriction in regard to price, leaving the settler who unfortunately located upon the odd-numbered sections at the mercy of the corporation within whose grant he may have settled. While it is true whoever goes upon unsurveyed lands goes at his own risk, yet these immigrants are here; they cannot wait for their lands to be surveyed; they must take their chances, oftentimes to suffer loss.

Government has wisely provided homestead and pre-emption rights for the landless citizen; and in view of these provisions they gather together their little all, and bid farewell to home and friends, sever the ties that bind them to "their dear native land," and go out bravely to endure the privations of a frontier life, in order to obtain for themselves a home "under their own vine and fig-tree."

To protect these, the Government is in duty bound to adopt such a policy as will best secure them in their rights. I deem it unnecessary to enter into details in reference to the resources of this State, further than to speak of the developments made since the supplemental report of September 15, 1868. Since then coal mines, that give promise of value, have been discovered on Butte Creek, in Clackamas County, near the base of the Cascade Mountains, in township six south, range two east. On the divide between the middle and coast forks of the Willamette River, gold-bearing quartz has been found which gives rich prospects. A quartz-mill has just been erected upon the ground, and will soon test the value of the mines.

The agricultural interests of the State are being rapidly developed; an abundant yield, with an active demand, at remunerative prices, has given an impetus to farming beyond anything since the early mining days on this coast.

The rapidity with which the Oregon and California Railroad is being built through the State carries with it the assurance of quick and easy communication with the commerce of the world, and adds to the inducements, already superior, to the tide of immigration "westward bound."

The certainty of crops gives confidence to the tiller of the soil that his labors shall be rewarded.

During the twenty years that I have resided in the State, there has been no failure of crops or an approximation thereto.

Referring to the table of estimates marked E, I deem it my duty to especially call attention to the item of \$2,400 compensation for two copying clerks in this office. This I consider indispensable, in view of the increased work in this office.

Very respectfully, your obedient servant,

W. H. ODELL,  
*Surveyor General.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington City, D. C.*

*A.—Surveying contracts acted upon during the fiscal year ending June 30, 1871.*

Contracts.		Contractors.	Location and description of lines.	No. of miles.	Estimated amount surveyed.					Gross amounts.	Remarks.
No.	Date.				Int. on State line.	Standard parallel.	Exteriors.	Subdivisions.			
132	Dec. 7, 1869	H. J. Stevenson, M. L. McCall.	Exterior, subdivisional, and meander lines of township 7 north, range 5 west; also, an island in the Willamette Slough, in sections 4 and 9, township 3 north, range 1 west.	74	M. ch. tk. ....	M. ch. tk. ....	M. ch. tk. 15 78 43	M. ch. tk. 75 25 20	\$1,143 48	Contract closed, account transmitted, and reported for payment.	
133	*Mar. 7, 1870	James Aiken.....	Exterior and subdivisional lines of fractional townships 24, 26, and 27 south, range 12 west; and subdivisions of fractional townships 26 and 27 south, range 13 west.	230	.....	.....	.....	.....	.....	Contract canceled September 17, 1870.	
134	May 24, 1870	George Mercer....	Exterior and subdivisional lines of township 11 south, range 8 west; and subdivisions of township 11 south, ranges 9 and 11 west.	96	.....	.....	6 03 50	98 24 00	1,270 25	Contract closed, account transmitted, and reported for payment.	
135	Aug. 17, 1870	James A. Warner.	Standard parallels between townships 13 and 14 south, through ranges 2 and 3 east; exteriors and subdivisions of township 14 south, ranges 1, 2, and 3 east.	156	.....	9 00 00	11 02 25	82 06 44	1,312 39	Contract closed, account transmitted, and reported for payment.	
136	Aug. 16, 1870	Wm. B. Pengra....	Exteriors and subdivisions of township 37 south, range 16 east; township 38 south, range 17 east; townships 31, 32, 33, and 34 south, range 10 east.	450	.....	.....	86 54 16	370 18 54	4,742 43	Contract closed, account transmitted, and reported for payment.	
137	Aug. 18, 1870	Jesse Applegate...	Exteriors and subdivisions of township 37 south, ranges 3, 4, and 5 east; township 38 south, range 10 east; also, connection with State boundary between Oregon and California, in township 41 south, ranges 1, 2, 7, 8, 10, and 11 east.	457	8 19 34	.....	20 72 77	20 00 32	636 05	Contract closed, account transmitted, and reported for payment.	
138	Aug. 20, 1870	John H. McClung.	Standard parallels from the corners to townships 15 and 16 south, ranges 13 and 14 east; west through ranges 13, 12, 11, 10, 9, and 8 east; exteriors of township 14 south, range 11 east; township 15 south, ranges 8 and 11 east; and exteriors and subdivisions of townships 14 and 15 south, ranges 9 and 10 east; and township 14 south, range 8 east.	444	.....	33 00 00	85 70 22	349 77 29	5,025 19	Contract closed, account transmitted, and reported for payment.	
139	Aug. 31, 1870	John W. Meldrum.	Exteriors of townships 11, 12, and 13 south, ranges 13, 14, 15, 16, and 17 east; subdivisions of township 11 south, range 14 east; township 12 south, ranges 13, 14, and 15 east; township 13 south, range 16 east; standard parallels west from	456	.....	6 00 00	150 31 40	340 40 08	5,209 72	Contract closed, account transmitted, and reported for payment.	



140	Aug. 31 1870	John B. David.....	the corner of townships 13 and 14 south, ranges 13 and 14 east. Exteriors and subdivisions of township 2 south, ranges 14 and 15 east; township 4 south, ranges 15 and 16 east; township 6 south, range 16 east; subdivisions of township 4 south, range 17 east; township 3 south, range 17 east; township 2 south, ranges 14 and 15 east.	482								
141	Aug. 31, 1871	Geo. W. Newman.	Exteriors and subdivisions of township 16 south, ranges 11 and 12 east; township 17 south, range 13 east; exteriors and subdivisions of township 16 south, range 10 east.	478	88	51	58	394	46	90	5,009 50	Contract closed, account transmitted.
142	Sept. 9, 1870	Wm. M. Turner & James Howard.	Exteriors and subdivisions of townships 32 and 33 south, range 2 east; and fractional township 41 south, ranges 3 and 4 east; subdivisions of fractional township 39 south, range 1 east.	170	46	13	18	112	20	30	2,039 51	Contract closed, account transmitted, and reported for payment.
143	Dec. 29, 1870	John H. McClung, Wm. B. Pengra.	Exteriors of township 17 south, range 1 east; subdivisions of fractional township 16 south, ranges 1 and 2 west; township 17 south, range 1 west; exteriors and subdivisions of townships 30, 29, 23, 27, and 26 south, range 14 east.	141								
144	Apr. 12, 1871	Jesse Applegate, Daniel W. Applegate, M. L. McCull.	Exteriors and subdivisions of township 38 south, ranges 4, 5, and 6 east; subdivisions of township 37 south, range 4 east; connection on State line of township 4 south, ranges 2 and 7 east; exteriors of township 40 south, ranges 11, 12, 13, and 14 east; exteriors of township 41 south, ranges 12, 13, and 14 east; subdivisions of township 40 south, ranges 11 and 12 east; connection on State line of township 41 south, ranges 8, 10, and 11 east.	387								
145	Apr. 23, 1871	Zenas F. Moody.....	Exteriors of township 1 north, ranges 33, 34, and 35 east; township 2 north, ranges 33 and 34 east; township 3 north, range 34 east; subdivisions of township 1 north, ranges 33 and 34 east; township 2 north, ranges 33 and 34 east; township 3 north, ranges 34, 35, and 36 east.	390								
146	May 2, 1871	George Mercert....	Standard parallels from southwest corner of township 34 south, range 9 east; exteriors and subdivisions of township 34 south, ranges 6 and 7 east; township 33 south, ranges 6 and 9 east; township 32 south, range 6 east.	374								
147	May 4, 1871	T. B. Handley.....	Exteriors of townships 5, 6, 7, and 8 south, ranges 12 and 13 east; subdivisions of township 7 south, range 13 east.	176								
148	May 17, 1871	John S. Kincaid....	Exteriors and subdivisions of townships 13, 14, and 15 south, ranges 40 and 41 east; exteriors of townships 13, 14, and 15 south, range 42 east.	468								

\*Contract transmitted to Commissioner August 25, 1870.

† Indian reservation.

† Indian reservation.

## A.—Surveying contracts acted upon, &amp;c.—Continued.

Contracts.	No.	Date.	Contractors.	Location and description of lines.	No. of miles.	Estimated amount surveyed.				Gross amounts.	Remarks.
						Interest on State line.	Standard parallel.	Exteriors.	Subdivisions.		
149	May 16, 1871		James H. Evans...	Standard parallel between townships 17 and 18 south, commencing at the southeast corner of township 17 south, range 17 east, east through ranges 18, 19, 20, 21, and 22; exteriors of townships and subdivisions of townships 16 and 17 south, range 18 east; townships 14, 15, 16, and 17 south, range 19 east.	456	<i>M. ch. lk.</i>	<i>M. ch. lk.</i>	<i>M. ch. lk.</i>	<i>M. ch. lk.</i>		
150	May 20, 1871		J. M. Dick .....	Exteriors of townships 15, 16, and 17 south, ranges 20, 21, and 22 east; subdivisions of townships 16 and 17 south, ranges 20, 21, and 22 east.	463						
151	May 23, 1871		Addison R. Flint & L. L. Williams.	Exteriors and subdivisions of townships 25, 26, 27, and 28 south, range 12 west; subdivisions of fractional township 29 south, ranges 3 and 4 west; township 28 south, ranges 4 and 5 west; fractional township 26 south, range 3 west; fractional townships 26, 27, and 28 south, range 13 west.	314						
152	May 24, 1871		Wm. E. Smith.....	Standard parallel between townships 4 and 5 north, west through ranges 4, 5, 6, 7, and 8; exteriors of townships 3 and 4 north, ranges 3 and 4 west; subdivisions of townships 3 and 4 north, range 3 west; and township 3 north, range 4 west.	246						
153	June 3, 1871		Wm. H. Byars ....	Subdivisions of fractional township 22 south, ranges 5, 6, and 7 west; fractional township 24 south, ranges 3 and 6 west; fractional township 25 south, ranges 5 and 6 west; fractional townships 27 and 28 south, ranges 8 west; fractional township 29 south, range 6 and 7 west; fractional township 32 south, ranges 4 and 5; fractional township 33 south, range 6 east.	250						
154	June 6, 1871		Geo. Williams & Geo. S. Pershon.	Exteriors and subdivisions of township 1 south, ranges 28, 29, and 30 east; exteriors and subdivisions of township 2 south, ranges 28 and 29; exteriors of township 2 south, range 30 east.	360						
155	June 19, 1871		W. R. Walker & H. C. Perkins.	.....	249						Canceled.

156	June 23, 1871	Timothy W. Davenport.*	Exterior boundary of Siletz Indian reservation; exteriors and subdivisions of such townships as will embrace the arable lands upon said reservation, connecting with the public survey of township 10 south, ranges 9 and 10 west.						
157	June 23, 1871	Geo. H. Thurston.	Exteriors and subdivisions of township 15 south, ranges 43 and 44 east; exteriors and subdivisions of township 10 south, ranges 42, 43, and 44 east.						

\* Indian reservation,



## B.—Statement of original plats of public surveys and copies transmitted since June 30, 1870.

Contract.		Contractors.	Lines.	Township.	Ranges.	Plats made.				
Number	Date.					Original.	Commissioner.	Register.	Total.	
134	May 24, 1870	George Mercer, (transmitted October 23, 1870.)	Exteriors ..... Subdivisions .....	11 south..... 11 south..... 11 south..... 11 south.....	8 west..... 8 west..... 9 west..... 11 west.....	1 1 1 1	1 1 1 1	1 1 1 1	3 3 3 3	
132	Dec. 7, 1869	Stevenson & McCall, (transmitted December 6, 1870.)	Exteriors ..... Subdivisions .....	7 north..... 7 north..... 3 north..... 3 north.....	5 west..... 5 west..... 1 west..... 1 west.....	1 1 1 1	1 1 1 1	1 1 1 1	3 3 3 3	
136	Aug. 16, 1870	William B. Pengra, (transmitted December 17, 1870.)	Exteriors ..... Exteriors ..... Exteriors ..... Exteriors ..... Subdivisions .....	31, 32, 33 south..... 37, 38 south..... 38 south..... 31 south..... 31, 32, 33 south..... 37, 38 south..... 38 south.....	9 east..... 10 east..... 16 east..... 17 east..... 9 east..... 10 east..... 16 east.....	1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1	3 3 3 3 3 3 3	
138	Aug. 20, 1870	John H. McClung, (transmitted December 22, 1870.)	Standard parallel ..... Exteriors ..... Exteriors ..... Subdivisions .....	Between 15 and 16 south..... 14, 15 south..... 14 south..... 14, 15 south.....	Through 13, 12, 11, 10, 9, and half through 8 east. 9, 10, 11 east..... 8 east..... 9, 10, 11 east.....	1 1 1 1	1 1 1 1	1 1 1 1	3 3 3 3	
139	Aug. 31, 1870	John W. Meldrum, (transmitted January 7, 1871.)	Standard parallel ..... Exteriors ..... Subdivisions .....	Between 13 and 14 south..... 11, 12, 13 south..... 11, 12 south..... 11, 12 south..... 12 south..... 13 south..... 13 south.....	13 east..... 13, 14, 15, 16, 17 east..... 15 east..... 14 east..... 13 east..... 16 east..... 2 east.....	1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1	3 3 3 3 3 3 3	
142	Sept. 9, 1870	Turner & Howard, (transmitted June 30, 1871.)	Exteriors ..... Exteriors ..... Subdivisions .....	41 south..... 32, 33 south..... 30 south..... 41 south.....	3, 4 east..... 3, 4 east..... 1 east..... 3, 4 east.....	2 east..... 3, 4 east..... 2 east..... 2 east.....	1 1 1 1	1 1 1 1	1 1 1 1	3 3 3 3
137	Aug. 18, 1870	Jesse Applegate, (transmitted April 12, 1871.)	Exteriors ..... Exteriors ..... Subdivisions .....	37 south..... 38 south..... 37 south..... 38 south.....	3, 4, 5 east..... 6 east..... 3 east..... 6 east.....	1 1 1 1	1 1 1 1	1 1 1 1	3 3 3 3	
Total.....										115

*C.—Townships surveyed since June 30, 1870, with area of public lands.*

Number.	Description.		Area.	By whom surveyed.
	Township.	Range.		
1	11 south	8 west	23,139.59	George Mercer.
2	11 south	9 west	15,704.18	Do.
3	11 south	11 west	9,731.02	Do.
4	7 north	5 west	21,809.60	Stevenson & McCall.
5	3 north	1 west	73.60	Do.
6	31 south	9 east	14,670.85	W. B. Pengra.
7	31 south	10 east	22,575.12	Do.
8	32 south	10 east	23,009.66	Do.
9	33 south	10 east	23,010.53	Do.
10	37 south	16 east	23,014.15	Do.
11	38 south	16 east	17,909.32	Do.
12	38 south	17 east	12,000.61	Do.
13	14 south	8 east	2,563.96	John H. McClung.
14	14 south	9 east	22,945.33	Do.
15	14 south	10 east	22,946.62	Do.
16	14 south	11 east	15,818.58	Do.
17	15 south	9 east	22,977.64	Do.
18	15 south	10 east	23,009.47	Do.
19	15 south	11 east	22,976.12	Do.
20	11 south	11 east	15,383.99	John W. Meldrum.
21	12 south	15 east	23,065.55	Do.
22	11 south	14 east	22,845.71	Do.
23	12 south	14 east	22,899.90	Do.
24	12 south	13 east	22,868.60	Do.
25	13 south	16 east	20,570.73	Do.
26	38 south	6 east	5,440.00	Jesse Applegate.
27	37 south	3 east	640.00	Do.
28	32 south	2 east	11,788.17	Turner & Howard.
29	33 south	2 east	6,879.71	Do.
30	39 south	1 east	3,200.00	Do.
31	41 south	3 east	4,251.57	Do.
32	41 south	4 east	7,895.78	Do.
Total			508,552.66	

*D.—Salaries paid surveyor general and clerks for fiscal year ending June 30, 1871.*

Names.	Occupation.	Nativity.	Term of service.	Amount paid.
E. L. Applegate	Surveyor general	Misouri	July 1, 1870 to Jan. 9, 1871	\$1,319 44
W. H. Odell	do	Indiana	Jan. 10, 1871 to June 30, 1871	1,180 56
Joel Ware	Chief clerk	Ohio	July 1, 1870 to Sept. 30, 1870	400 00
James Horrocks	do	England	Oct. 1, 1870 to Jan. 9, 1871	444 44
A. W. Stowell	do	Indiana	Jan. 10, 1871 to June 30, 1871	755 56
George Stowell	Draughtsman	do	July 1, 1870 to June 30, 1871	1,362 46
W. H. Haley	Transcribing clerk	Kentucky	July 1, 1870 to Nov. 30, 1870	500 00
William R. Walker	do	Missouri	Dec. 1, 1870 to Dec. 31, 1870	100 00
Bell Jennings	do	Pennsylvania	Nov. 28, 1870 to Jan. 9, 1871	140 87
W. H. Haley	do	Kentucky	Jan. 1, 1871 to Mar. 31, 1871	296 67
Total				6,500 00

*E.—Estimates for surveying and office expenses for fiscal year ending June 30, 1873.*

Salary of surveyor general	\$2,500 00	
Salary of chief clerk	1,600 00	
Salary of draughtsman	1,400 00	
Salary of two clerks at \$1,200 each	2,400 00	
Incidental expenses, messenger, rent, &c.	2,000 00	
		\$9,900 00
For surveying 36 miles standard parallel, at \$18 per mile	648 00	
For surveying 156 miles standard parallel, at \$15 per mile	2,340 00	
For surveying 300 miles exteriors, at \$16 per mile	4,800 00	
For surveying 1,080 miles exteriors, at \$12 per mile	12,960 00	
For surveying 1,200 miles subdivisions, at \$16 per mile	19,200 00	
For surveying 4,800 miles subdivisions, at \$10 per mile	48,000 00	
		87,948 00
Total		97,848 00

F.—Statement of incidental expenses for fiscal year ending June 30, 1871.

Date of voucher.	To whom made payable.	For what expended.	Amount.
September 30, 1870..	A. V. Peters & Co.....	Office rent .....	\$75 00
September 30, 1870..	A. S. Patterson .....	Postage.....	11 00
September 30, 1870..	William Gale .....	Messenger .....	150 00
December 31, 1870..	A. V. Peters & Co .....	Office rent .....	75 00
December 31, 1870..	A. V. Peters & Co .....	Miscellaneous.....	31 25
December 31, 1870..	James F. Brown .....	Stationery .....	51 00
December 31, 1870..	A. S. Patterson .....	Postage.....	18 03
December 31, 1870..	William Gale .....	Messenger .....	150 00
December 31, 1870..	John Wand .....	Map cases .....	29 00
December 31, 1870..	H. R. Kincaid .....	Printing .....	50 00
January 10, 1871 .....	A. V. Peters & Co .....	Office rent .....	8 33
January 10, 1871 .....	A. S. Patterson .....	Box rent .....	7 40
January 10, 1871 .....	William Gale .....	Messenger .....	16 66
March 31, 1870.....	J. S. Kincaid .....	Printing .....	21 00
March 31, 1870.....	M. E. Walker .....	Tracing case .....	16 25
March 31, 1870.....	B. F. Dorris .....	Stoves and pipe .....	36 25
March 31, 1870.....	J. D. Kinsey .....	Pigeon-hole cases .....	120 00
March 31, 1870.....	F. B. Dunn .....	Paper.....	7 00
March 31, 1870.....	A. S. Patterson .....	Postage and office mat .....	163 86
March 31, 1870.....	G. C. Pearce .....	Furniture.....	19 25
March 31, 1870.....	W. H. Abrams .....	Case and table .....	38 75
March 31, 1870.....	A. V. Peters & Co .....	Rent, &c.....	108 38
March 31, 1870.....	William Gale .....	Messenger .....	133 34
June 30, 1871 .....	A. L. Bancroft & Co .....	Paper and field books .....	54 85
June 30, 1871 .....	F. B. Dunn .....	Carpeting .....	135 00
June 30, 1871 .....	A. V. Peters & Co .....	Office rent and wood .....	84 72
June 30, 1871 .....	John S. Kincaid .....	Printing blanks .....	20 00
June 30, 1871 .....	John Wand .....	Map cases .....	12 00
June 30, 1871 .....	E. M. Wait .....	Printing and ruling blanks .....	16 00
June 30, 1871 .....	A. S. Patterson .....	Stationery and postage .....	10 70
June 30, 1871 .....	Gray & Co .....	Expressage .....	10 00
June 30, 1871 .....	F. Dudley .....	Messenger .....	150 00
Total.....			1,829 02

## P.—Report of the surveyor general of Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
*Olympia, Washington Territory, September 11, 1871.*

SIR: I have the honor to submit my annual report of surveying operations in this district for the year ending June 30, 1871, embracing statements as follows:

A.—Showing the amount, character, and condition of public surveys in Washington Territory contracted for under the appropriation for the fiscal year.

B.—Showing original plats made, and number of copies transmitted to the General Land Office and to the district land offices.

C.—Showing the number of linear miles run, the rate per mile, and the cost of surveys in this Territory, under appropriation for the fiscal year ending June 30, 1871, so far as reported by deputy surveyors up to that date.

D.—Showing the number and designation of the townships, and the number of acres surveyed in this Territory during the fiscal year.

E.—Showing the amount and condition of appropriation, and the amount paid on contracts for surveys made for and up to the close of the fiscal year.

F.—Showing the amount and condition of special deposits made for the survey of public lands during the fiscal year.

G.—Account of appropriation for the salary of the surveyor general for the fiscal year.

H.—Account of appropriation for compensation of clerks and draughtsmen in the office of the United States surveyor general for the fiscal year.

I.—Account of office rent, stationery, fuel, pay of messenger, and incidental expenses of the United States surveyor general's office for the fiscal year.

J.—Estimate of amount required to survey public lands in Washington Territory for the fiscal year ending June 30, 1873.

The fourth standard parallel has been extended east from the Columbia guide meridian, to range 44 east of the Willamette meridian, to afford a base for the survey of townships in the Pelouse Valley, and vicinity. Between the fourth and sixth standards, and extending from the Columbia guide meridian to the eastern boundary of the Territory, is a body of excellent agricultural and grazing land estimated to contain



about 1,500,000 acres. It is generally level, well watered by the Pelouse River and its tributaries, the banks of which are well supplied with timber. Small groves of timber are also found on the hills and uplands. Generally, stock can range in this locality throughout the year, and subsist on bunch-grass, which grows in great abundance, the nutritive qualities of which are nearly as good in the winter as in the summer. Occasionally, a season occurs when it is necessary to feed stock a few weeks. The deputy surveyor, Mr. L. P. Beach, after running the standard line seventy-two miles through this region, gives this general description: "The land on each side of this line, east of the Columbia guide meridian, is unequaled on the Pacific coast for grazing purposes; while along the streams, and in all the flats, the soil is of first quality and produces excellent crops." The line of the Northern Pacific Railroad will probably run through this portion of the Territory. The exterior and subdivisonal lines of townships 17 north, range 35 east; 17, 18, and 19 north, range 36 east, and 17 north, range 37 east, containing 115,030.76 acres, being a portion of the tract referred to, have been surveyed during the year. The fourth standard has also been extended through ranges 3, 4, and 5 east, to enable surveys to be made in those ranges lying between the fourth and fifth standards. Surveys have also been carried on east of the Cascade Mountains, in Colville and Yakama Valleys.

It is almost impossible for this office to procure competent surveyors to take contracts to survey land west of the Cascade Mountains, owing to the difficulties encountered in prosecuting surveys, and the inadequacy of compensation allowed. The character of the country surrounding the waters of Puget Sound must be seen to be fully appreciated. A large portion of it is hilly and broken. In any other country, not possessing a range of mountains with an altitude from 5,000 to 14,000 feet, many of these hills would be called mountains. Covered with heavy forests of giant fir, cedars, and other trees, and an almost impenetrable undergrowth, the progress of the deputy surveyor is necessarily slow, and the maximum rate allowed for surveys will not compensate him for his labor.

At the present moment, under the appropriation for the current year, competent surveyors will not take contracts west of the mountains at the maximum rates now allowed. The inquiry may be made, what necessity exists for the survey of land of this character? The reply to this is, that in the valleys of the rivers and smaller streams are several hundred or several thousand acres, as the case may be of first-class agricultural land in a township on which pre-emption settlers are located; the other portion of the township is heavily timbered and the soil generally second or third class. This is the general rule, not the exception. I am not aware of a township of land west of the mountains that is not to a greater or lesser extent heavily timbered. To enable those settlers to procure titles, it is necessary that the entire township should be surveyed, if practicable. The custom has been, and is now, for deputy surveyors to demand from the settlers a bonus, in addition to the amount allowed by the surveyor general; and if this is not complied with, the contract will not be taken. This practice is unjust to the settlers, many of whom are not able to spare the amount demanded, and yet their great anxiety to have the boundaries of their claims defined will induce them to part with means accumulated by toil and privation, which they intended to use in paying for their land when it was surveyed.

In my annual report for 1869 I suggested that the maximum rates for surveys of lands of the character referred to be augmented to \$18 per mile for meridian and parallel, \$16 for township, and \$14 for section lines. I desire, respectfully, to renew this suggestion, being satisfied that these rates will only afford a fair compensation to deputy surveyors. Another fact should be taken into consideration: all business in this Territory is transacted, and all payments made, on a coin basis. The deputy receives his compensation in currency, the average value of which, for the past two years, has been 82½ cents on the dollar. At present it is 87½. This discount is a loss to the deputy. The rate now allowed in Oregon, for lands west of the mountains, not so difficult to survey as those of this Territory, is \$16 per mile for township and section lines.

Thirteen townships, including fractional townships, west of the mountains were surveyed during the year. In addition to these, there are at least fifty townships unsurveyed now occupied by actual settlers, who are clamorous to have their land surveyed. In many cases a township contains only three or four settlers; and, although they have occupied claims in some instances for more than ten years, I have felt it my duty to survey other townships having a larger number of settlers.

The anxiety of the settlers for surveys has been largely increased since the equitable title of the Northern Pacific Railroad Company attached to the odd sections of lands within the railroad grant. Many of these settlers are on odd sections; and although they have been assured that the railroad company possesses no title to land on which a valid pre-emption claim existed at the time of withdrawal, yet they naturally feel solicitous about the matter, especially as their all is involved. The only remedy is increased annual appropriations for surveys.

The grant of the odd sections to the Northern Pacific Railroad Company is materially retarding settlements on unsurveyed lands, and this will continue until the entire

body of land, within the railroad limits, is surveyed, and the railroad lands segregated from the public lands. Settlers cannot determine, before survey, the even from the odd sections, and hence will not settle on unsurveyed lands within the grant. When it is recollected that the grant embraces the odd sections for forty miles on each side of the line of the railroad, and that a very large portion of this is unsurveyed, the extent of territory from which the settler is practically excluded will be apparent. Those lands lying contiguous to the railroad would naturally be the first to be occupied by immigrants, were it not for the reason already assigned, and the additional reason, that the railroad company can give no title until after survey. I would, therefore, respectfully suggest that the lands within the railroad grant should be surveyed at the earliest practicable moment, and that a special appropriation may be made for that purpose, as was done in the case of railroad lands in Minnesota.

Having given, in my supplemental report of August 10, 1870, which was not published, a full description of the topography, climate, resources, commerce, agricultural productions, manufactures, &c., &c., of this Territory, I do not deem it necessary to repeat the same, and I am unable to add anything thereto.

I have the honor to transmit herewith the usual annual map showing progress of surveys, &c.

I have the honor to be, very respectfully, your obedient servant,

E. P. FERRY,  
*Surveyor General.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington City, D. C.*

A.—Statement showing the amount, character, and condition of public surveys in Washington Territory, contracted for under appropriation for the fiscal year ending June 30, 1871.

Contract.		Name of deputy.	Character and location of work.	Estimated number of miles.	Rate per mile.	Estimated cost of work.	Remarks.
No.	Date.						
109	1870. Aug. 13	Edwin Richardson.	Exterior boundaries of township 5 north, ranges 14 and 15 east, township 6 north, ranges 22 and 23 east, and 7 north, range 23 east, Willamette meridian.	66	\$12	\$792	Completed.
			Subdivisional lines of township 5 north, range 15 east, 4 north, range 21 east, 6 north, range 22 east, 7 north, range 23 east, 9 north, ranges 25 and 26 east, and 10 north, range 26 east.	420	10	4,200	Completed.*
110	Aug. 22	Lewis P. Beach ...	Extension of the fourth standard parallel, through ranges 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, and 43 east, Willamette meridian.	78	15	1,170	Completed.
			The exterior boundaries of townships 17, 18, and 19 north, range 36 east, 17 north, ranges 35 and 37 east, and 18 north, range 37 east.	84	12	1,008	Completed.
			Subdivisional lines of township 17, 18, and 19 north, range 36 east, and 17 north, ranges 35 and 37 east.	300	10	3,000	Completed.
111	Aug. 29	Walter B. Hall ...	The subdivisional lines of townships 25 and 26 north, range 5 east, Willamette meridian.	120	10	1,200	Completed.
112	Aug. 31	Thomas M. Reed ..	The exterior boundaries of townships 17, 18, and 19 north, range 3 east.	30	12	360	Completed.
			Subdivisional lines of townships 18 and 19 north, range 2 east, 18 north, range 3 east; and fractional townships 18 and 19 north, range 1 east, and 17 north, range 2 east.	270	10	2,700	Completed.*
113	Aug. 31	Edward Giddings .	Extension of the fourth standard parallel, through ranges 3, 4, and 5 east, Willamette meridian.	18	18	324	Unfinished.
			Exterior boundaries of townships 17, 18, and 19 north, ranges 4 and 5 east, and 20 north, range 5 east.	72	15	1,080	Unfinished.
			Subdivisional lines of township 20 north, range 5 east.	60	12	720	Unfinished.
114	Sept. 2	Peter W. Crawford	The west boundary of township 9 north, range 6 west.	3	10	30	Completed.*
			Subdivisional lines of township 5 north, range 2 east, 7 north, range 1 west, and 9 north, range 6 west, all fractional.	103	10	1,030	Unfinished.
115	Sept. 3	John A. Cornelius.	Exterior boundaries of township 35 north, range 3 east.	12	12	144	Completed.
			Subdivisions, township 28 north, range 5 east, and 35 north, range 3 east.	120	10	1,200	Completed.
116	Oct. 18	G. F. Whitworth ..	Exterior boundaries of township 23 north, range 6 east.	12	12	144	Unfinished.
			Subdivisional lines of same .....	60	10	600	Unfinished.
117	Oct. 20	G. F. Whitworth ..	Subdivisional lines of fractional township 29 north, range 2 east.	40	10	400	Completed.†
118	Nov. 25	Henry N. Stearns..	Subdivisional and meander lines in completion of townships 11 and 12 north, range 1 west.	18	10	180	Completed.*
119	1871. Jan. 5	D. B. S. Henry.....	Subdivisions and meanders of an unsurveyed fraction of township 37 north, range 2 east.	2½	12	30	Completed.†

\* Completed since June 30, 1871.

† Special deposit.

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.



B.—Showing original plats made, and number of copies transmitted to the General Land Office and to the district land offices in Washington Territory, during the fiscal year ending June 30, 1871.

No. of exterior bound- aries.	No. of township sub- divisions.	Description of plats.	Original.	General Land Office.			When trans- mitted.
				District land office.	Total.		
2	1	Township 6 north, ranges 22 and 23 east .....	2	2	1	5	Sept. 27, 1870
1	1	Township 7 north, range 23 east .....	1	1	1	3	Sept. 27, 1870
1	1	Township 5 north, range 15 east .....	1	1	1	3	Oct. 24, 1870
1	1	Township 10 north, range 26 east .....	1	1	1	3	Nov. 15, 1870
2	2	Township 9 north, ranges 25 and 26 east .....	2	2	2	6	Nov. 26, 1870
3	...	Townships 17, 18, and 19 north, range 3 east .....	1	1	...	2	Nov. 26, 1870
1	...	Township 17 north, range 4 east .....	1	1	...	2	Nov. 26, 1870
3	...	Township 17 north, ranges 35, 36, and 37 east .....	1	1	...	2	Nov. 30, 1870
2	...	Township 18 north, ranges 35 and 36 east .....					
1	...	Township 19 north, range 36 east .....					
1	...	Township 5 north, range 14 east .....	1	1	...	2	Nov. 30, 1870
2	2	Townships 17 and 18 north, range 36 east .....	2	2	2	6	Dec. 5, 1870
1	1	Township 17 north, range 2 east .....	1	1	1	3	Dec. 19, 1870
1	1	Township 29 north, range 2 east .....	1	1	1	3	Jan. 4, 1871
1	1	Township 19 north, range 2 east .....	1	1	1	3	Jan. 24, 1871
1	1	Township 35 north, range 3 east .....	1	1	1	3	Jan. 26, 1871
1	1	Township 17 north, range 35 east .....	1	1	1	3	Feb. 1, 1871
1	1	Township 17 north, range 37 east .....	1	1	1	3	Feb. 1, 1871
1	1	Township 19 north, range 36 east .....	1	1	1	3	Feb. 1, 1871
1	1	Township 19 north, range 1 east .....	1	1	1	3	Feb. 6, 1871
1	1	Township 37 north, range 2 east .....	1	1	1	3	Feb. 8, 1871
2	2	Townships 25 and 26 north, range 5 east .....	2	2	2	6	April 2, 1871
1	1	Township 28 north, range 5 east .....	1	1	1	3	May 10, 1871
DONATION CLAIM PLATS.							
		Township 29 north, range 2 east .....	1	1	1	3	Mar. 15, 1871
MISCELLANEOUS.							
		Fourth standard parallel, ranges 3 and 4 east .....	1	1	...	2	Nov. 26, 1870
		Fourth standard parallel, range 31 to 43 east, inclusive .....	1	1	...	2	Nov. 24, 1870
		Diagram, township 16 north, range 4 west .....	1	1	1	3	Sept. 10, 1870
		Diagram, township 9 north, range 37 east .....	1	1	1	3	Sept. 15, 1870
		Diagram, township 30 north, range 5 west .....	1	1	1	3	May 30, 1871
		Diagram, township 36 north, range 39 east .....	1	1	1	3	April 8, 1871
		Diagram, township 23 north, range 5 east .....	1	1	1	3	April 24, 1871
		Diagram, township 29 north, range 2 east .....	1	1	1	3	Mar. 15, 1871
		Map of Washington Territory .....	1	1	...	2	
		Sundry maps, diagrams, and tracings .....	13	...	...	13	
17	20	Total .....	48	35	27		
		Total number of plats made .....				110	

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

C.—Showing the number of linear miles run, the rate per mile, and the total cost of surveys in Washington Territory, under appropriation for the fiscal year ending June 30, 1871, so far as reported by deputy surveyors up to that date.

Description.	Distance.	Rate per mile.	Total cost.
	<i>Ms. ch. lks.</i>		
Standard lines.....	84 00 00	\$15	\$1,260 00
Standard lines.....	12 00 00	18	216 00
Township lines.....	208 54 34	12	2,504 15
Township lines.....	11 76 60	15	179 36
Section lines.....	1,003 44 87	10	10,035 61
Meander lines.....	107 58 56	10	1,077 32
	1,427 74 37		15,272 44
Add number of miles and cost of surveys payable from special deposits.	42 12 41		427 03
Total number of miles run .....	1,470 6 78		
Total cost of surveys.....			\$15,699 47

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

D.—Showing the number and designation of the townships and the number of acres surveyed in Washington Territory during the fiscal year ending June 30, 1871.

No.	Townships surveyed.	Acres.	Remarks.
1	Township 5 north, range 15 east .....	23,012.06	Complete.
2	Township 6 north, range 22 east .....	23,021.82	Complete.
3	Township 7 north, range 23 east .....	22,862.79	Complete.
4	Township 9 north, range 25 east .....	22,675.96	Complete.
5	Township 9 north, range 26 east .....	22,717.33	Complete.
6	Township 10 north, range 26 east .....	23,058.66	Complete.
7	Township 17 north, range 2 east .....	14,034.51	Fractional.
8	Township 17 north, range 35 east .....	23,037.65	Complete.
9	Township 17 north, range 36 east .....	23,013.13	Complete.
10	Township 17 north, range 37 east .....	22,997.20	Complete.
11	Township 18 north, range 36 east .....	23,023.62	Complete.
12	Township 19 north, range 1 east .....	7,455.85	Fractional.
13	Township 19 north, range 2 east .....	21,319.44	Complete.
14	Township 19 north, range 36 east .....	22,986.16	Complete.
15	Township 25 north, range 5 east .....	20,390.19	Complete.
16	Township 26 north, range 5 east .....	22,499.42	Complete.
17	Township 28 north, range 5 east .....	22,375.48	Complete.
18	Township 29 north, range 2 east .....	8,793.19	Fractional.
19	Township 35 north, range 3 east .....	21,845.21	Complete.
20	Township 37 north, range 2 east .....	138.90	Fractional.
	Amount surveyed .....	391,259.57	
	Amount previously surveyed.....	5,563,177.77	
	Total number of acres surveyed in the Territory.....	5,954,437.34	

E. P. FERRY,  
Surveyor General, Washington Territory,

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

E.—Showing the amount and condition of appropriation and the amount paid on contracts for surveys made for and up to the close of the fiscal year ending June 30, 1871.

No. of contract.	Name of deputy.	Estimated amount of contracts.	Amount paid on contracts.	Remarks.
109	Edwin Richardson.....	\$4,992 00	\$4,815 49	Unfinished.*
110	Lewis P. Beach.....	5,178 00	5,247 13	Completed.
111	Walter B. Hall.....	1,200 00	1,306 31	Completed.
112	Thomas M. Reed.....	3,060 00	1,952 52	Unfinished.*
113	Edward Giddings.....	2,124 00	395 36	Unfinished.
114	Peter W. Crawford.....	1,000 00	.....	Unfinished.
115	John A. Cornelius.....	1,344 00	1,555 59	Completed.
116	George F. Whitworth.....	744 00	.....	Unfinished.
118	Henry N. Stearns.....	180 00	.....	Unfinished.*
Estimated amount under contract.....		19,882 00		
Aggregate amount paid on surveys up to the close of the fiscal year.			15,272 40	

\* Completed since June 30, 1871.

Amount of appropriation for the fiscal year ending June 30, 1871.....	\$20,000 00
Amount paid on contracts as above.....	15,272 40
Balance applicable to surveys under uncompleted contracts.....	4,727 60

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

E. P. FERRY,  
Surveyor General, Washington Territory.

F.—Showing the amount and condition of special deposits made for the survey of public lands in Washington Territory during the fiscal year ending June 30, 1871.

Date of deposit.	Name of depositor.	AMOUNT DEPOSITED.		
		For field-work.	For office-work.	Total.
October 20, 1870..	David Kellogg.....	\$400 00	\$50 00	\$450 00
January 5, 1871..	Nickles as above.....	30 00	30 00	60 00
	Total.....	430 00	80 00	510 00

Date of contract.	Name of deputy.	Cost of field-work.	Cost of office-work.	Balance re-turned to depositor.	Total.
October 20, 1870..	George F. Whitworth.....	\$394 15	\$50 00	\$5 85	\$450 00
January 5, 1871..	D. S. B. Henry.....	32 88	27 12	.....	60 00
	Total.....	427 03	77 12	5 85	510 00

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

E. P. FERRY,  
Surveyor General, Washington Territory



G.—Account of appropriation for the salary of the surveyor general of Washington Territory for the fiscal year ending June 30, 1871.

1870. Sept. 30	To account of E. P. Ferry, for 1st quarter's salary.	\$625 00	1870. July 15	By appropriation by act of Congress, for salary of surveyor general of Washington Territory, approved July 15, 1870.	\$2,500 00
Dec. 31	To account of E. P. Ferry, for 2d quarter's salary.	625 00			
1871. March 31	To account of E. P. Ferry, for 3d quarter's salary.	625 00			
June 30	To account of E. P. Ferry, for 4th quarter's salary.	625 00			
		<u>2,500 00</u>			<u>2,500 00</u>

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

H.—Account of appropriation for compensation of clerks and draughtsmen in the office of the United States Surveyor General of Washington Territory, for the fiscal ending June 30, 1871.

1870 Sept. 30	To amount paid clerks and draughtsman, first quarter, as per accounts rendered.	\$1,125 00	1870 July 15	By appropriation by act of Congress approved July 15, 1870, for compensation of clerks in the office of the surveyor general of Wash- ington Territory, for the fiscal year ending June 30, 1871.	\$4,000 00
Dec. 31	To amount paid clerks and draughtsman, second quar- ter, as per accounts ren- dered.	1,125 00			
1871 March 31	To amount paid clerks and draughtsman, third quar- ter, as per accounts ren- dered.	1,125 00			
June 30	To amount paid clerks and draughtsman, fourth quar- ter, as per accounts ren- dered.	624 00			
	Balance.....	1 00			
		<u>4,000 00</u>			<u>4,000 00</u>

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

I.—Account of office rent, stationery, fuel, pay of necessary and incidental expenses of the United States surveyor general's office for Washington Territory, for the fiscal year ending June 30, 1871.

1870 Sept. 30	To amount paid, first quarter, as per vouchers and ac- counts rendered.	\$329 25	1870 July 15	By appropriation by act of Congress approved July 15, 1870, for the fiscal year ending June 30, 1871.	\$2,000 00
Dec. 31	To amount paid, second quar- ter, as per vouchers and accounts rendered.	275 00			
1871 March 31	To amount paid, third quar- ter, as per vouchers and accounts rendered.	483 33			
June 30	To amount paid, fourth quar- ter, as per vouchers and accounts rendered.	703 11			
	Balance.....	209 31			
		<u>2,000 00</u>			<u>2,000 00</u>

E. P. FERRY,  
Surveyor General, Washington Territory.

SURVEYOR GENERAL'S OFFICE,  
Olympia, Washington Territory, June 30, 1871.

J.—*Showing estimate of amount required to survey public lands in Washington Territory for the fiscal year ending June 30, 1873.*

## FOR FIELD-WORK.

Meridian and standard lines, 106 miles, at an average of \$18 per mile .....	\$1,908 00	
Exterior township lines, 720 miles, at an average of \$14 per mile .....	10,080 00	
Subdivisional and meander lines, 6,000 miles, at an average of \$12 per mile .....	72,000 00	
	<hr/>	\$83,988 00

## FOR OFFICE-WORK.

Salary of surveyor general .....	\$2,500 00	
Salary of chief clerk .....	1,800 00	
Salary of draughtsman .....	1,600 00	
Salary of assistant draughtsman .....	1,400 00	
Salary of two copying clerks, at \$1,200 each .....	2,400 00	
Amount for office rent, stationery, fuel, wages of messenger, and incidental expenses .....	2,000 00	
	<hr/>	11,700 00
Total estimate .....		<hr/> 95,688 00

E. P. FERRY,  
*Surveyor General, Washington Territory.*

SURVEYOR GENERAL'S OFFICE,  
*Olympia, Washington Territory, June 30, 1871.*

### Q.—*Report of the surveyor general of Wyoming Territory.*

SURVEYOR GENERAL'S OFFICE,  
*Cheyenne, Wyoming, September 30, 1871.*

SIR: In compliance with your letter of instructions of April 7 last, I have the honor to submit the following annual report, in duplicate, of the surveying operations of this district, with the statements below enumerated.

A.—Statement of surveys contracted for under the appropriation of \$25,000, made by act of Congress approved March 3, 1869.

B.—Statement of surveys contracted for under the appropriation of \$40,000, made by act of Congress approved July 15, 1870.

C.—Map of the southeast portion of Wyoming Territory, showing the extent of the public surveys.

D.—Statement of surveys contracted for under special appropriations of Congress.

E.—Statement of surveys contracted for, to be made for account of individual depositors, within the fiscal year ending June 30, 1871.

F.—Statement of townships surveyed in Wyoming Territory to June 30, 1871, of which the field-notes have been returned, examined, and approved.

G.—Statement of the amount expended for compensation of the surveyor general during the fiscal year ending June 30, 1871.

H.—Statement of the amount expended for compensation of clerks during the fiscal year ending June 30, 1871.

I.—Statement of the amount expended for incidental expenses.

K.—Estimate of appropriations required for the surveying service for the fiscal year ending June 30, 1873.

The statements relating to the surveys are so explanatory that comment is hardly necessary. I am pushing the surveys as rapidly as possible, and confining them to such localities as will best subserve the immediate interests of settlers. Our extent of territory is so vast, that what I have been able to do so far makes a comparatively small show.

In the matter of incidental expenses, as shown by statement I, I have endeavored to practice rigid economy, and by that means there is left unexpended of the \$2,000 appropriation, made July 15, 1870, a balance of \$680 20.

The appropriation for office-work is not sufficient to enable me to keep the work in proper shape. I made it hold out last year, for the reason that more than half of the

surveys under last year's appropriation did not come into the office until the beginning of this fiscal year. I have three clerks only, and they have been obliged to work nearly double the number of hours per day that are allotted to Department clerks, in order to avoid complaint from the deputies at delay in forwarding their accounts. The appropriation is too small to pay even this insufficient force, and there will be a deficiency of \$700 on their salaries next spring. I trust that the estimate I make for four clerks, for the next fiscal year, will be allowed by Congress, as the office-work cannot be kept up properly with a less number.

I have the honor to further report my observations, and the facts collected, upon the several subjects relating to the chief products and resources of this new Territory. I have dwelt to considerable length on these matters, in order to enlighten the public mind as fully as possible concerning the extent and character of these resources, and to dispel the popular belief that in these high altitudes, and among these Rocky Mountain peaks, there is little else than snow, frigid winter, and barely a trifle of the precious metals.

Agriculture will make slow progress for the present, until irrigation is provided for and the settlers can possess the Indian country north of the North Platte and the Sweetwater, (the forty-second parallel of north latitude.) There is a belt of nearly three degrees of latitude north of that line, the surface of which, in the valleys, and east and northeast of the Big Horn Mountains, slopes rapidly toward the Yellowstone River, and will sustain a large agricultural population, (requiring little or no irrigation,) when freed of Indians.

I have therefore confined myself principally to those resources of the Territory, which, with capital and population, can be made immediately available, to wit:

1st. Climate, which is the key to winter grazing, and the facility and economy with which stock can be raised.

2d. Stock and sheep, and the value and importance of these great industries, which are so peculiarly adapted to this mountain region.

3d. Coal and iron ore, which so plentifully abound in this Territory, and furnish such broad and lasting foundations for future wealth and general prosperity.

4th. The question as to the existence of gold and silver in our principal mountains. This question, I take great pleasure in saying, is already solved, in my own estimation, and I am convinced that these metals exist in quantities far exceeding the most sanguine expectations that I had formed before examining the different localities. A little placer gold had been found in the Medicine Bow range, and a number of mines had been opened at the base of the Wind River range, at Sweetwater; but there seemed to be doubt as to the future yield and permanency of these last, and no silver ore had been discovered until late this season. Deciding to bring my long experience and observations among the mines and mineral veins of Missouri and elsewhere into requisition by making personal examination of the geological features and formation of our most accessible mountains, and seeing to what extent their geology indicated gold and silver bearing rocks, I thus made five expeditions to as many distinct mountains, three of which expeditions occupied from ten to twelve days each.

I have given as succinct an account of these different journeys as the importance of the subject would permit; and having found so much to encourage, in the gold and silver bearing indications of the rocks and localities examined, I shall hope to be able to examine two or three other mountain ranges next season.

My visit to and examination of the Sweetwater gold mines has increased my confidence in their permanent mineral wealth, and also in the safety of judiciously investing mining capital there.

Both gold and silver have been discovered this season in the Seminole Mountains, a range that, until lately, was not known to exist by most of our population, but which will furnish valuable and permanent veins of these metals. So also of the Sabyille and Laramie Peak Mountains, where no discoveries are yet made. The very favorable indications which I found existing there will result, I trust, in the commencement of prospecting in earnest next spring, and in the success of which I have the utmost confidence.

With persevering efforts in this direction, it will take but a short time to show to the mining world that we are not behind the other Territories in the extent, variety, and permanent wealth of our mineral resources.

#### CLIMATE OF WYOMING.

My printed annual report of last year covered three pages on the subject of climate, and I wish to avoid repetition as much as possible. But it is a subject of so vital importance to the stock and wool grower (if not to the miner) that I have taken pains to collect all the meteorological facts that have been recorded here during the past year, in the hope that they will enable the stranger to our locality and climate to form a correct opinion of the peculiarities which belong to this altitude of 6,000 to 7,000 feet.



The climate here, along the base and within the valleys of the Rocky Mountains, is less generally understood than any other feature of the region.

The Allegheny Mountains and the White Mountains, were they 7,000 feet above the sea, would show perpetual snow in the latitude of  $41^{\circ}$ ; but in the Rocky Mountains the perpetual-snow line is 12,000 to 13,000 feet above sea-level. Here, at Sherman, at the altitude of 8,200 feet, there is good pasturage, but little snow; the ground is bare for portions of all the winter months, and potatoes and other vegetables can be grown with irrigation. The wonderful influence that produces these effects is not yet fully appreciated or understood.

We well know that the isothermal line of  $50^{\circ}$  mean annual temperature, in its course across the continent, makes a graceful curve to the north, after crossing the Mississippi River, and passes over the Rocky Mountains to its terminus on the Pacific Ocean at Puget Sound. The chief cause of this lies in the fact that the Pacific furnishes a "tropical stream" far greater and warmer than the Gulf Stream of the Atlantic. Thus, San Francisco has a mean annual temperature about  $14^{\circ}$  higher than the same latitude on the Atlantic coast. This increase of annual heat holds good all along the coast of California over the same latitudes on the Atlantic, and also along the coasts of Oregon and Washington.

Another strange feature is, that no rain falls in California from May till November, and no rain-clouds seem to pass over it during that time from the surface of the Pacific to supply rains to the thousand miles of Rocky Mountain belt. Since I made a tour this season through California and down its southern coast, and witnessed the parched surface, and experienced a temperature of over  $104^{\circ}$  in the shadiest places, I can better appreciate the strange attributes of the Pacific Ocean, which push the isothermal line far to the north, and cause the warm dry air to spread over the whole mountain region, and throughout all its long interior valleys, like that of the Colorado River and its branches, which furnish passes for the warm currents, both summer and winter, to the plains of Green River and Laramie, to the valleys of Utah, and even to the "parks" of Colorado. It is this heated air of the tropics, passing over the balmy surface of the Pacific, and forcing its way up the valleys and along the sides of our loftiest mountains, that forces back the frozen air of the north, and makes the snow and ice retire up the sides of our mountains at the earliest dawn of spring-time.

*Annual mean temperature at Cheyenne.*—This is generally considered to be about  $50^{\circ}$ . Last year I took the annual mean from an observation taken at 3 o'clock p. m. each day, which gave  $55^{\circ}.78\frac{1}{2}$ . But this year I have condensed the meteorological tables politely furnished me by Mr. Asa C. Dobbins, observer, who has charge at this place of the War Department telegrams and reports relating to meteorology, and for the benefit of commerce.

The following tables exhibit a careful analysis and summary of all meteorological data for the last eleven months. They are compiled from three daily observations, taken at 6 a. m., 2 p. m., and 9 p. m., respectively, Cheyenne time. The mean temperature of these three daily observations, (the 6 a. m. one being taken earlier in the morning than heretofore in this region of the mountains,) is shown to have been  $47^{\circ}.33$  for the eleven months. The yearly mean at Fort Laramie, I understand, has been  $50^{\circ}$  heretofore. This fort is ninety miles north of Cheyenne, but is 1,500 to 2,000 feet lower in altitude, and in the valley of the North Platte.

Cheyenne is a higher and more exposed point than any other along the eastern base of the mountains, at the same distance from them.

*The course of the winds* is shown in the tables, and also their velocity and frequency. It appears that out of the 1,002 observations taken during eleven months, 276 showed the wind from the west, 176 from the south, 117 north, 48 east, 136 northwest, 86 southwest, 48 southeast, and 23 northeast. Eighty-one of the observations showed *calm* weather, free from storms or wind; 68 showed stormy weather.

*The rain-fall of the year* shows only 8.97 inches. This seems to be below the general yearly average. Last year my report showed 12.73 inches for twelve months preceding. Dr. Latham says, "the Black Hills and Laramie Plains are in the belt where 20 inches of rain falls annually,"—but this certainly cannot have been the case for many years past. The past season has been a very dry one all through this region, and the creeks and rivers were never known so low. The chief reason of this can be seen in the small snow-fall here from November to April, inclusive. During these six months only 1.96 inches of rain and melted snow fell. Our snows are so light and dry that 12 inches of snow make only an inch of water, and none of the snow-storms of this period were over 3 inches deep here at a time, one generally melting, or being blown away, before another came. There were, also, only 15 storms for the four months from November to February, inclusive.

*The extremes of temperature.*—December was the coldest month of the year, the mean temperature being only  $21^{\circ}.19$ . The thermometer fell below zero on six different days, the 12th, 14th, 19th, 20th, 21st, and 22d, the 21st being the coldest,  $23^{\circ}$  below zero; the warmest day was  $57^{\circ}$ . We had  $2\frac{1}{2}$  to 3 inches of snow at that time. On the 23d of this month I was at St. Louis, and found 8 inches of snow, and the thermometer that

night fell to  $14^{\circ}$  below zero, which, with the damp atmosphere there, is felt far more than  $23^{\circ}$  below is here.

The following month, January, 1871, was the most remarkable month of the year, the monthly mean of three daily observations (one being unusually early, 6 a. m.) showing  $31^{\circ}.58$ . The warmest observation was  $64^{\circ}$ ; the coldest  $9^{\circ}$  below zero, the only instance during the month that it fell below, which was at 6 a. m. on the 12th. For the first ten days of the month it was warmer here than at any other place on the continent, north of the thirty-fifth parallel and east of California; some days being only equaled at New Orleans and Mobile. At 2 p. m., on those days, the thermometer stood as follows: 1st,  $36^{\circ}$ ; 2d,  $39^{\circ}$ ; 3d,  $43^{\circ}$ ; 4th,  $53^{\circ}$ ; 6th,  $49^{\circ}$ ; 7th,  $53^{\circ}$ ; 8th,  $56^{\circ}$ ; 9th,  $64^{\circ}$ , and the 10th,  $58^{\circ}$ . There is no such instance of January temperature along the forty-first parallel of north latitude, east of the Rocky Mountain belt.

February, 1871, gave a mean temperature of  $29^{\circ}$ . The highest was on the 3d,  $55^{\circ}$ , while on the 11th it was  $10^{\circ}$  below zero at 6 a. m. There were four stormy days, but only .08 of an inch of rain (snow) fell.

July was the warmest month. The highest temperature was  $97^{\circ}$ , the lowest  $50^{\circ}$ , and the mean for the month was  $71^{\circ}.87$ . The thermometer rose once to  $97^{\circ}$ , once to  $96^{\circ}$ , once to  $95^{\circ}$ , and three times to  $90^{\circ}$ , at 2 p. m. There were ten rainy days, with a total rain-fall of 1.26 inches.

In August the highest temperature was  $93^{\circ}$ , the lowest  $42^{\circ}$ ; mean for the month  $67^{\circ}.83$ . The two hottest days were the 9th 17th, and  $90^{\circ}$  and  $93^{\circ}$ . There were five stormy days, with a total rain-fall of 0.36 of an inch.

The following table is so much condensed as to show a very accurate picture of the weather for the year, and will repay perusal by any one wishing to know the character of this climate fully.

## Climate of Wyoming.

Month.	Dates of special observations of extremes.	Mean temperature from three daily observations.	Extreme observations of temperature.	Extreme barometrical observations, not corrected for temperature.	Greatest velocity of wind observed, miles per hour, direction, and pressure.	Number of observations windy, with direction of wind.	Mean velocity of wind for number of windy observations—miles per hour.	Number of miles registered by anemometer during month, and average per hour.	Number of days stormy during month.	Aggregate amount of rain or melted snow in inches.	Remarks.
1870 Nov.	4th and 24th, 28th, 17th, 6th.	33° 24	61°, 8°	24.39, 23.70	On the 8th and 21st, 46 miles per hour; direction, west; pressure, 10.42 lbs. per square foot.	18 observations calm; 72 windy, viz: 13, north; 4, south; 35, west; 11, northwest; 9, southwest.	15.51	Not stated	4	0.41	Besides the extreme velocity of wind noted, it was 35 miles 1 observation, and 32 miles 6 observations.
Dec.	31st, 21st, 25th, 6th.	21° 19	57°, —23°	24.28, 23.65	On the 30th, 54 miles per hour; direction, west; pressure, 14.75 pounds.	17 observations calm; 76 windy, viz: 10, north; 6, south; 43, west; 1, northeast; 15, north- west; 1, southwest.	15.00	Not stated	4	0.09	The thermometer indicated be- low 0 on six days, viz: 12th, 14th, 19th, 20th, 21st, and 22d. Wind was 43 miles 1 observa- tion, 46 miles 1 observation, and 45 miles 4 observations.
1871 Jan.	9th, 12th, 1st, 11th, 7th.	31° 58	64°, —9°	24.46, 23.58	46 miles; direction, west; pressure, 10.75 pounds.	10 observations calm; 83 windy, viz: 11, north; 20, south; 1, east; 42, west; 2, northeast; 2, northwest; 5 southwest.	12.56	Not stated	3	0.28	
Feb.	3d, 11th, 2d, 23d, 27th.	20°	55°, —10°	24.15, 23.41	34 miles; direction, southwest; pres- sure, 5.76 pounds.	3 observations calm; 81 windy, viz: 8, north; 10, south; 1, east; 33, west; 2, northeast; 7, northwest; 3, southeast; 17, southwest.	11.30	Not stated	4	0.08	
Mar.	13th, 2d, 30th, 7th, 8th.	34° 66	64°, 14°	24.41, 23.53	34 miles; direction, west; pressure, 5.78 pounds.	3 observations calm; 90 windy, viz: 13, north; 17, south; 2, east; 24, west; 2, northeast; 18 northwest; 2, southeast; 12 southwest.	11.44	Not stated	6	0.11	



Apr.	4th, 10th, 20th, 18th, 18th.	41° 73'	73°, 13°	24.41, 23.53	44 miles; direction, northwest; pres- sure, 9.68 pounds.	4 observations calm; 86 windy, viz: 14 north; 13 south; 2, east; 27 west; 4, northeast; 15, northwest; 2, southeast; 9, southwest.	10.62	Not stated.....	8	0.95
May.	26th, 2d, 25th, 29th, 1st.	56° 86'	86°, 33°	24.35, 23.56	38 miles; direction, west; pressure, 7.22 pounds.	7 observations calm; 86 windy, viz: 10, north; 20, south; 7, east; 15, west; 2, northeast; 13, northwest; 10, south- east; 9, southwest.	10.62	6,848, being an av- erage of 9.20 per hour.	12	2.16
June.	19th and 25th, 5th, 26th and 27th, 3d, 13th.	63° 61'	91°, 51°	24.46, 24.00	26 miles; direction, west; pressure, 3.38 pounds.	4 observations calm; 86 windy, viz: 16, north; 20, south; 6, east; 12, west; 4, northeast; 14, northwest; 7, southeast; 7, southwest.	8.51	6,340; average, 8.75 per hour. This gives a greater average than the mean of the windy observa- tions.	8	2.25
July.	16th, 8th, 14th, 7th, 5th.	71° 87'	97°, 50°	24.45, 24.05	23 miles; direction, west; pressure, 2.64 pounds.	6 observations calm; 87 windy, viz: 10, north; 24, south; 19, east; 9, west; 4, northeast; 10, northwest; 6, southeast; 5, southwest.	9.32	6,572; average, 9.24 per hour.	10	1.26
Aug.	17th, 30th, 15th, 26th, 15th.	67° 83'	93°, 42°	24.52, 24.10	25 miles; direction, north; pressure, 3.12 pounds.	5 observations calm; 88 windy, viz: 12, north; 26, south; 5, east; 16, west; 4, northeast; 11, northwest; 7, southeast; 7, southwest.	8.72	6,638; average, 8.92 per hour, being more than the mean of the windy observa- tions.	5	0.36
Sept.	21st, 26th, 9th, 7th, 22d.	59° 13'	88°, 35°	24.52, 24.03	22 miles; direction, west; pressure, 2.42 pounds.	4 observations calm; 86 windy, viz: 8, north; 16, south; 5, east; 20, west; 1, northeast; 20, north- west; 11, southeast; 5, southwest.	8.19	5,560; average, 7.72 per hour.	4	0.74

All these subjects present aspects so entirely different, in the dry and elevated region of our plains and mountain valleys, as compared with those which exist in the valley States and in lower altitudes, that too much can scarcely be said in explanation of their peculiarities, to the agriculturists and stock-growers of those rainy localities.

In my report of last year I remarked that these plains along Crow, Lodge-Pole, Horse, and Chugwater Creeks, east of the Laramie Mountain, of 5,000 to 6,000 feet elevation, would yield 30 to 40 bushels of wheat to the acre, if sown in April and properly irrigated. The soils almost everywhere here are of choice quality for all small grains and vegetables, and will yield amazingly if you give them water.

Artesian wells, and even smaller wells with wind-mills upon them, will be resorted to largely in certain localities, as the country becomes older, and capital and population become more abundant.

A clever volume might be written upon the strength of our soils in the production of vegetables, esculent roots, &c., when properly cultivated and irrigated. The Greeley Tribune says: "William S. Taylor, who began farming two years ago in the Cache à la Poudre Valley, raised cabbages this season weighing 45 pounds each, thirty-seven of which filled a wagon with side-boards on." I saw a wagon-load at the hotel a few days since that measured *four feet* each in circumference, after being stripped of the outside leaves and made ready for boiling. Such cabbages as these can be easily grown on our valley lands without a particle of manure, if judiciously irrigated. Noticing a load of potatoes lately, very large and uniform in size, I made some inquiry of Mr. Patterson, who raised them on Lone Tree Creek, near Cheyenne, as to how many bushels he could raise per acre. He said from 200 to 400 bushels per acre was only a fair crop when properly cared for. Those I saw in his wagon "were plowed in last spring," he said, "and plowed out this fall," without any hoeing or intermediate attention whatever—not even irrigating. He weighed thirty of them, which weighed 47 pounds, and he told me that from one barrel of seed he had raised 100 bushels of potatoes, having marked off the line planted so as to know how much the yield would be.

Mr. Taylor, before referred to, raised carrots 31 inches long, and his average yield of wheat was 30 bushels per acre, though he states himself that he did not irrigate sufficiently. This was in the Cache à la Poudre Valley, forty miles south of this city, near the town of Greeley, in which the first house was built eighteen months ago, and it now numbers about 1,500 inhabitants.

During a recent visit to California I saw what could be done by farmers and gardeners, on a moderate scale of expense, by the use of small windmill pumps for the purpose of irrigation. On the plain between Sacramento and Stockton I saw many of these windmills, and in the city of Stockton almost every large garden was watered from a well, from 20 to 60 feet deep, by a windmill pump. The same method is adopted in Santa Clara Valley, on such wells as will not naturally flow to the surface, and also in many other places in the State, and it will become universal except where capital shall be used to bring down large canals from the heads of streams.

Every citizen about Cheyenne owning a garden or small farm should at once resort to the use of a windmill, for plenty of water exists 15 to 50 feet below the surface, which could be made useful in this way when the five-mile race from Crow Creek fails to bring water to the city, as it did this year for the most part of the summer.

These subjects have been very ably handled by Mr. Dunlap, a large farmer of Champagne County, Illinois, in a lengthy communication published in the Chicago Tribune of September 4, which I take pleasure in giving all the publicity I can.

Mr. Dunlap visited these plains and mountain valleys this summer, and though a large farmer on the rich soil of Illinois, with habits and modes of thought adapted to farming in that State, he has closely and impartially examined into what at first appears so incomprehensible to a stranger, and has expressed an impartial judgment on what he saw, which is so in harmony with my own observation and experience that I prefer to give *his* conclusions, which the reader may consider more impartial than my own would be, coming as they do from a stranger, merely on a tour of observation through a country that for a generation or more past has been so improperly called "The Great American Desert." Mr. Dunlap says:

"In considering the agricultural resources of Kansas, Colorado, Wyoming, and Nebraska, we must examine the effects of elevation, the air currents, the geological and mechanical condition of the soil. We should also bear in mind that climate is the great arbiter of agricultural wealth, and that the soil, water, and forests are but secondary only so far as they do not make new conditions. If we look at the map of the world we see at a glance that a part of the great current of heated air that forms the Gulf Stream, and which is found northward of the trade-winds, and which have been forced out of their normal course by the Andes, is pressed up the long slopes that connect the Gulf with the Rocky Mountains. The moisture that is carried with this warm air is formed into clouds, and these seek the lower level of the Mississippi Valley, and are driven to the northeast by counter currents, while the warm

air follows the mountain ranges, and spreads over the treeless plains west of the Missouri. These two forces have divided the country into the rainy and the dry region, the lines of which are quite distinctly marked. The rainy region is well adapted to a mixed husbandry, and will produce all the plants of the temperate zone. The dry region, on the other hand, in its natural condition, produces only grasses. In the rainy region the native grasses continue to grow from early spring until October, when their annual growth is completed. But unless these grasses are cut and cured as hay, in their most nutritious condition, they are of no value for winter food for live stock, as the frosts and the rains destroy their value for this purpose. For these reasons the farmer must store up fodder for at least four months' feeding during the winter. But then he may grow the cereals, corn, potatoes, and other roots; he can plant forests that will yield him valuable timber for commercial purposes, and to shelter his grounds from the cold winds that come from the north, and which, mingling with the warm damp air from the south, precipitates the moisture and reduces the temperature.

"This line of demarkation is crossed by the Union Pacific Railroad, near Grand Island, on the Platte River, near the twentieth degree of longitude west of Washington, and on the Kansas Pacific on the same line. To the west of this line is another condition of things, but the soil has little or nothing to do with this, as it is simply the effect of the air currents, as changed by the topography of the country. The warm-air current is not chilled by the damp clouds, but its warm breath is at times like the air from a heated oven, for it comes from the tropics, and its moisture has passed eastward, and it is slowly cooled by the north wind, the cool air from the snowy range. These have a powerful effect during the night, but the steady supplies of hot air from the south hold the balance of power, and the result is a much warmer country than the rainy region to the east. We thus have a strip of country four hundred miles wide to the base of the Rocky Mountains, and from the Gulf to the Saskatchewan River, in latitude 52°. We may call this the great pastoral region of the continent, a region where no other food than the native grasses is required, either summer or winter, to grow and fatten stock equal to that produced in the agricultural districts with the aid of grain and shelter.

"In this winter-pasture section the fall of snow is light—seldom more than four inches, and this is at once evaporated by the warm south wind. It is not melted by the sun, as with us, and the snow-water softening the soil, for as fast as melted it goes into the atmosphere, forming a light, summer-like cloud, which floats off toward the rainy belt. During March, April, and May, there are light showers that rouse the dormant grasses, and they then make their annual growth, which is but a few inches of short, early tufts, that are soon cured, like hay, with all their nutriment unimpaired, in which condition it remains until cropped by the animals. All through the summer this grass is dry, and yet the stock range on it and crop it with as much eagerness as if the most succulent of grasses. A farmer, passing through the country and not knowing of this peculiar feature of the grass, would pronounce the country of no value for stock-growing; and yet it is the richest grazing region on the continent. The beef is rich and tender, while the milk is superior for butter and cheese. In the Southern States the yield of milk is small, yet the quality is good when used as milk; but the cream will not readily separate from the milk, and the making of good butter is almost out of the question. But here the cream rises in great quantity, and is made into very superior butter. For the making of cheese it is also very superior, making a soft, rich cheese. Colorado cheese commands, in Denver, ten cents more a pound than the best Illinois factory cheese—not the cheese branded Illinois, but the Illinois cheese that is branded and sold for New York factory cheese.

"It will be seen that the atmosphere, by its peculiar air-currents, dividing this great slope that leads up from the Mississippi River to the foot-hills of the Rocky Mountains—from an elevation of 300 feet to that of 6,000—has been the cause of dividing it into two distinct belts of climate; the one adapted to all the products of the temperate zone, and the other simply a pastoral region, producing its grasses in three months for the support of the whole year; a country that people have called a desert; a country that has been pronounced uninhabitable except by the buffalo, the antelope, and the Indian. But modern civilization has discovered great value in this whole section, and it is now being put to use; in short, it is revolutionizing the pastoral aspect of the whole country. But this is not all, for nearly the whole space occupied by that belt called the Rocky Mountains is but an extension of this great pastoral region for two hundred miles more to the west. This whole range of mountains is undergoing a rapid change. The granite is yielding to the climate, and is being disintegrated and crumbling into the elements of soil.

"*The soil.*—I do not intend to speculate on the vast changes that have been wrought in all this region, or by what process the formations that overlaid the granite have been transported eastward to form this drift; but we can see that, in addition, the denuding forces have transported large quantities of the granite and mixed its disintegrated particles largely with the soil. First, the limestones have been dissolved and carried



into the valley, forming a clay soil, which has been in places overlaid with sand, while on nearly all this dry plain the granite and sandstone are the leading materials of the soil, and they thus afford a good natural drainage. This you may say is unnecessary; but its value will be seen when we come to the subject of irrigation. The foothills present to view limestone shale, while limestone for building purposes crops out along the streams and has been found up through the surface of the prairie in many places. As we reach the base of the mountains, the old red sandstone is presented in large quantity. These form vertical walls, hundreds of feet high, through which the streams have cut their way, and are called cañons; a little further, and nothing but granite is presented to the eye; all the secondary rocks have disappeared, and the granite is yielding to the forces of nature. Granite gray, granite red, some mixed with mica, some with quartz, some with feldspar, and some with flint; but all of it contains potash—that element of the soil so essential to the growth of wheat, and which has given to the standing pools an excess of alkali. Such, in brief, are the leading characteristics of this trans-Missouri country, toward which the attention of the world is just now turned.

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*“Irrigation.”*—It was found that water added to the soil produced magical results, and thus gradually a system of irrigation has been adopted, and is rapidly extending over all the country where water is attainable from the streams, and it is not improbable that the system will be extended from wells by the aid of windmills. The area that is supplied with water from the streams is limited, as regards this great extent of country, yet it is capable of sustaining an immense population, and is of great value, not only to the hundreds of thousands that must be employed in the mines, but to the army of railroad employes and the herdsmen. None of our new States have opened up a larger field to the industries that produce the raw material of a nation's wealth than is here presented; for we must take into consideration the mineral as well as the agricultural resources of the country. And this is what explorers and geographers have been pleased to call the ‘Great American Desert;’ ‘the fields of cactus and of interminable sage,’ where ‘pools of alkali’ ‘poison all the stock, and where the buffalo and the wild Indian shall ever hold undisputed sway.’ But the charm is broken, the genius of man is changing their condition and bending them to his use. The gardener turns the mountain rills on to the arenulous soil, sparsely covered with dry grass, and studded with prickly cactus. After being moistened with water, the plow can enter its sun-baked crust, when it becomes a kindly, friable soil that returns the hands of culture a rich reward. With from \$1 to \$3 per acre for cost of water and labor extra, this soil will produce immense crops of the cereals, of vegetables, and of the native or cultivated grasses. In the culture of these staples, corn excepted, the profit is greater than in the rainy districts and on our richest soils. The cost of the ditches and the annual extra labor is not more than the cost of tile-draining and the making of roads for our best Illinois farms. In those dry districts the roads are always of the best, nor do the streets of the towns need more than a little rounding up, in order to have them in the best condition. The soil is of that peculiar texture that the water does not soak into it. The same system of irrigation applied to our common prairie soil would reduce it to a quagmire, and would fill the wells flush with the surface. In the hoed crops the water is turned down each row, while in the small grains the drains are about 8 feet apart; but in order to saturate the intervening space of 4 feet, that is half on each side, the plowing must be deep and the pulverization of the soil thorough. On the unbroken prairie the water does not penetrate the side of the ditch, and the soakage is extremely small.

“The quantity of water must depend on the condition of the soil and the particular crop that is planted. Grass land may be overflowed for a time, but in the cultivated land the water is restricted to the small waterways, and thus reaches the roots of the plant by soaking into the pulverized earth. If allowed to flow over the surface there would be danger of sun-scald, as with us after a long-continued rain. Irrigation requires much attention, as too much or too little water are alike detrimental to the crops.

“The subject of irrigation is being thoroughly studied by both farmers and gardeners, and will, no doubt, be reduced to a system. Wheat is sown from February to late in April; it never rusts or is winter-killed, but produces almost uniform returns. While 40 to 50 bushels to the acre is not uncommon, yet, I judge, the average is not over 20 bushels. Late sowing and the unskillful management of the water is the cause of this. I have no doubt that 40 bushels is no more than a fair average, with good culture. The farm of Peter Magnus, five miles from Denver, has come up to this average, and with 75 bushels of oats, while his vegetables have more than doubled the best of our market gardens.

“Many people have the impression that this irrigating is a muddy, dirty piece of work, but such is not the case. If there is any one kind of labor that will keep one

out late in the evening, it is the turning the water down the rows of vegetables, or through the plat of flowers in the front yard.

"In the planting of trees the land should be well moistened before planting, and not to allow the roots to be flooded at any time, as with most fruit and forest trees too much water is fatal. A poplar, willow, or cottonwood, will bear an amount of water that would destroy most other trees; for this reason do not plant them with others. Cuttings of willow 5 feet long, with one end inserted a foot in the earth near the line of the ditch and placed one foot apart in the row, will soon make a substantial fence, and also be of value for shelter; for shelters from the mountain winds are very essential, both for profit and comfort.

"The demand for garden-truck, for farm products, and fruits, will stimulate irrigation and make it a prominent feature in the active industries of the day; but the system of irrigation is one of co-operation, and is best accomplished by united capital. The farmer who settles on the banks of a stream may construct his own ditch, or three or four may join in the work. But the business has outgrown this state of things, and now demands careful engineering and large amounts of money for the construction of the main ditches. The practice in these cases is the formation of a ditch company, who sell the water for a certain sum, which is about \$2 per acre per annum. But a more economical plan is the *colony system*, as practiced at Greeley and the Chicago colony of Longmont. In this case the common fund is used to purchase the land and construct the ditches, leaving an annual charge for repairs only. The Kansas Pacific, the Denver Pacific, and the Union Pacific, have large tracts of lands, all of which they offer to colonies and individuals intending to improve them, at very low rates. Aside from the purchase of lands and the construction of ditches, there is no community of interests, for any person can sell his interest at any time he pleases, subject to the conditions of improvement that may be required, for all must improve their purchase within the year, or their money (\$155 the share) is to be returned. All the shares of the Greeley colony have been sold. In addition to the railroad lands, which are held at \$3 to \$4 an acre, the alternate sections are subject to homestead or pre-emption, but not subject to private entry. Thus it will be seen that this new country is not cursed with land speculation, but may be by a water monopoly, but which should be guarded against by the new settler. There are at this time openings for a thousand colonies like those mentioned, all of which may be equally successful if their affairs can be administered by men of as sterling integrity as those in charge of Greeley and Longmont. It is doubtful if a better plan for a colony can be devised than the two now in such successful progress.

"*Settlement of the plains.*—Can these pastoral plains be settled? All say 'Yes, but it must be by the herdsman, who, like Jack of old, may drive his herds from plain to plain, and lead a sort of nomadic life.' But there are elements that man will employ to make, in time, a material change in the whole aspect of the country. For twenty miles on each side of the railroads named the companies own one-half of the land, while the other half is held for settlement in small holdings not exceeding 80 acres each. At present the pasturage is so abundant that no one is desirous of purchasing the land, but by and by the owners of stock wish to locate, and they make a purchase near some station, as is now the case along the Smoky Hill River, where the herdsmen have made purchase of from 2,000 to 10,000 acres each of these railroad lands. Within these are the Government lands that they cannot purchase, for they are reserved for homesteads and pre-emption, in tracts of 80 acres. This will give them the use of these alternate sections for a long time, for, in their present condition, they are only valuable for pasturage. But Mr. R. S. Elliott, the industrial agent of the Kansas Pacific, has proved that trees may be grown on these plains without the aid of irrigation, at least if this year's experience proves anything. As there is an abundance of water in all that country, by the sinking of wells, generally at from 20 to 30 feet, a sufficient amount could be obtained from this source for the purpose of starting shelter belts, say of four rods wide, to surround each 40-acre tract. Mr. Elliott has also shown that wheat, oats, barley, corn, and potatoes, may be grown to a reasonable extent, and that, so soon as any considerable surface can be covered with this kind of reticulated forest, the rain-fall would be insured and the evaporation materially lessened, both of which would aid in the growth of common farm-crops.

"If the railroad company would direct Mr. Elliott to inclose at each station a 40-acre tract, with a belt of deciduous trees, four rods in width, I have no doubt that it would hasten the settlement along the line of road more than any one cause. While Mr. Elliott has demonstrated the fact that trees will grow on the plains, yet people must see the plan carried out to a practical conclusion. Our agricultural colleges are attempting to teach practical agriculture by planting small plats of ground, and at one industrial university some hundreds of these plats may be seen, all of which will prove nothing to the practical man who is accustomed to plant crops by the acre. Now, this experiment of Mr. Elliott proves nothing to the settler, and only proves to the man of science what may be accomplished. But if you can show a shelter belt of



a mile in length inclosing 40 acres of land, that fact can be comprehended; but if you only show a little patch of trees, that fact carries no conviction with it, no more than the 4-foot-square patch of wheat at the university will carry any weight with the farmer of broad acres; both of these plans are simply an attempt to bore auger holes with a gimlet. At Omaha the railroad management were talking of planting a belt of trees on both sides of the road for a hundred miles. This is talking business, and will lead to good results.

"The experiments of Mr. Elliott are good so far as they have gone, but they need to be carried further, for practical results must be reached. I would provide well-water at each station, to be used in case of need, and this well should be on the place, for I would put a family on each tract, and have other crops tested at the same time. The next 40 acres would need only three-fourths of a mile of forest belts to inclose it.

"The ground should be trench-plowed not less than 8 inches deep, and this work should be done either in the autumn or very early in the spring, in order to be moistened by the March showers; and then, too, the planting must be done early, before the plants begin to start into growth. For this reason I would obtain plants in the fall, and keep them through the winter in moist soil. These little things may not appear of much importance, yet they are so.

"*Trees to be planted.*—No two varieties of trees should be planted together, but each should have its allotted space in the belt. First in order would be European larch; the second, Osage orange; third, white ash; fourth, the soft and ash-leaved maples and elms. The walnut and soft wood would have little attention on this dry plain, as would be the case with the pine family. To make this belt of a mile would cover  $7\frac{1}{2}$  acres, and the trees at 4 feet each way would number 3,000 to the acre, or nearly 25,000 plants. Two-year-old larch plants cost now \$10 per 1,000; Osage orange, \$2; white oak, \$4; and the maples from \$1 to \$2; elm, \$3.

"In all the district west of the Missouri the winds are severe at times, and it would pay to plant shelter belts; in fact, farmers are beginning to plant them west of Omaha. For all the distance to Grand Island, on the Union Pacific Railroad, the prairie winds have seriously injured the corn.

"*The climate.*—We may safely estimate that one-half of the rural population of this new district have gone there in most part to improve the health of some one or more members of the family. Among these, lung complaints are the most prominent. There appear to be few cases that are not benefited in a greater or less degree. Certain it is that, even with this influx of ailing ones, the doctors have small practice. This is, no doubt, due in part to the disposition to give nature a chance to try her hand.

"In all new countries there are many unpleasant things. Homes must be made, trees must have time to grow, new associations must be formed, and there is fiction in all new things. Before one breaks up his home for a new one, all these things should be discussed, and the advantages and disadvantages well weighed. If you have a family, first go out and select the location and provide a home. At Greeley and Longmont the success has been most wonderful, yet many suffered almost untold hardships before they had the wherewith to shelter the family from the cool nights and the changing days.

"If possible, join some well-regulated colony, for all colonists go to make a home, and ought not to be called pioneers, at least of the old stamp, who simply drive back the Indians, and when civilization comes up to him sells his claim and moves on.

"The several land-grant railroads are anxious to form the nucleus of new settlements, and offer excellent inducements to *active* men with or without families, though the former are more highly prized, for they are both producers and consumers, and thus add more largely to the business of the road.

"There is one thing more that should not be forgotten; that is, the Rocky Mountains are destined to be the great resort of health and pleasure-seekers, not simply for the summer months, but for the whole year. The cool, bracing mountain air, and the absence of sudden changes, give it the advantage of a mountain climate, without its damp atmosphere and cloudy skies."

#### STOCK-RAISING ON THE PLAINS.

So much has been written by Dr. Latham and other gentlemen of experience, in regard to the advantages and facilities for raising stock on these plains, and the remarkable fact, proven by many years of past experience, that it will subsist through the winter upon the summer-cured grasses as they stand on the ground without shelter or other care than for the herdsmen to guard them from separating and wandering off, that I need not recapitulate.

Below I give the list of stock, so far as I have been able to obtain reliable data, which has been pastured this season in the localities named, along the Union Pacific Railroad, between the waters of the North Platte and the Laramie plains. It has been intro-



duced here within the last two or three years, and very largely within the present year. There is abundance of room for many times as much more :

Name of owner.	Residence.	Where herded.	What kind.	Number of head.
E. Creighton & Co.....	.....	Laramie Plains.....	Stock cattle.....	15,000
E. Creighton & Co.....	.....	.....do.....	Calves.....	1,800
E. Creighton & Co.....	.....	.....do.....	Mares.....	1,000
Dr. Latham and Captain Coates.	Laramie.....	.....do.....	Stock and calves.	4,000
L. Fillmore.....	.....do.....	.....do.....	Stock.....	300
L. Fillmore.....	.....do.....	.....do.....	Dairy cows.....	100
..... Haley.....	.....do.....	.....do.....	.....do.....	700
..... Bennett.....	.....do.....	Elk Mountain.....	Stock.....	400
..... Carmichael.....	.....do.....	Laramie Plains.....	American.....	300
Clarence King and N. R. Davis	California.....	Lone Tree Creek.....	.....do.....	500
Thomas & Hay.....	Cheyenne.....	.....do.....	.....do.....	150
J. W. Hiff.....	.....do.....	Crow Creek and Platte..	.....do.....	12,000
D. & J. Snyder.....	.....do.....	.....do.....	Beef and stock..	5,000
M. V. Boughton.....	.....do.....	Horse Creek.....	.....do.....	600
J. H. Durbin & Bro.....	.....do.....	.....do.....	.....do.....	600
F. Landan.....	.....do.....	Pole Creek.....	.....do.....	200
Tracy & Hutchinson.....	.....do.....	.....do.....	.....do.....	700
J. M. Carey & Bro.....	.....do.....	Crow Creek.....	.....do.....	700
Nuckolls & Gallagher.....	.....do.....	Platte.....	.....do.....	3,000
Frank Ketchum.....	.....do.....	.....do.....	Milch cows.....	150
W. D. Pennock.....	.....do.....	.....do.....	.....do.....	40
James A. Moore.....	.....do.....	Pole Creek.....	.....do.....	1,300
W. G. Bullock.....	Fort Laramie.....	Horse Creek.....	.....do.....	4,000
Ed. Creighton.....	Omaha.....	.....do.....	.....do.....	3,500
Texas owner.....	.....do.....	.....do.....	.....do.....	1,500
Milner & Davis.....	.....do.....	.....do.....	.....do.....	200
..... Farrel.....	.....do.....	Laramie River.....	.....do.....	300
..... Tracy.....	.....do.....	Muddy Creek.....	.....do.....	500
..... Whitcomb.....	.....do.....	Box Elder.....	Beef cattle.....	1,000
J. S. Maynard.....	.....do.....	Lone Tree.....	.....do.....	200
Generals Duncan, Perry, and Short.	.....do.....	Horse Creek.....	.....do.....	2,400
Keith & Barton.....	.....do.....	North Platte.....	.....do.....	3,000
..... Brown.....	.....do.....	.....do.....	Yearling.....	1,300
Major Walker.....	.....do.....	.....do.....	Stock.....	500
Coe & Carter.....	.....do.....	.....do.....	.....do.....	9,000
E. Creighton.....	.....do.....	.....do.....	Beef cattle.....	800
Taylor, Galyford & Co.....	.....do.....	Cache la Poudre.....	Beef and stock..	5,000
D. C. Tracy.....	Pine Bluffs.....	Pine Bluffs.....	Stock.....	700
Ecoffey & Co.....	.....do.....	Sabylle Creek.....	.....do.....	350
..... Powell.....	.....do.....	North Fork Laramie.....	.....do.....	1,500
Benjamin Mills.....	.....do.....	Chugwater.....	.....do.....	400
R. Whalen.....	.....do.....	.....do.....	.....do.....	250
John Phillips.....	.....do.....	.....do.....	.....do.....	250
..... Simpson.....	.....do.....	.....do.....	.....do.....	100
H. B. Kelley.....	.....do.....	.....do.....	.....do.....	750
John Hinton.....	.....do.....	.....do.....	.....do.....	125
W. G. Bullock.....	.....do.....	.....do.....	.....do.....	125
F. M. Phillips.....	.....do.....	.....do.....	.....do.....	2,100
Adolph Cuny.....	.....do.....	North Platte.....	.....do.....	1,000
Dickey & Sloan.....	.....do.....	Muddy Creek.....	American.....	80

The editor of the Western World has published in his New York paper the following observations in regard to stock and grazing on these plains, being the result of what he saw and learned while on a recent tour through here to California. In his estimate he includes the large herds in the neighborhood of the junction of the two Platte Rivers, and in the Humboldt Valley, and is therefore larger than the list of herds principally in Wyoming. I have introduced these remarks from the Western World in order that stock-growers in the States may see what impartial *non-residents* say of this great industrial interest on the late "American Desert."

"On a recent visit to the Pacific coast over the Union and Central Pacific Railroads, I took some pains to ascertain the amount of cattle now being pastured along those roads. I have more than once insisted that the belt of country on the Laramie Plains, and just east of the Rocky Mountains, and a portion of the Humboldt Valley adjacent to the Pacific road, embraced some of the finest grazing lands on the continent, and had heard a good deal recently about the large herds which have been driven from Texas and the Indian Nation during the past year, to be fattened on the nutritious grasses of the Platte River and Laramie Plains, preparatory to shipment over the railroad to the markets of the East. I knew that the business had become a large one, but had no idea of the extent to which it has attained—a business, be it remembered,

which is but just commenced, as two years ago there was not a hoof in the whole country, except draught-cattle belonging to trains, and a few ranchero's cows, where to-day there are not less than 140,000 head of cattle, 5,000 horses, and over 75,000 sheep, on the Union Pacific west of Fort Kearney.

"On the Laramie Plains, and east of Laramie Mountain, Wyoming, are a great many small herds of from 100 to 500 beef and stock cattle, and large flocks of sheep, of which we were unable to learn the names of the owners, and which many good judges estimate would swell the figures far above the aggregate which I have just ventured to state. The greater portion of these cattle were driven hither from the southern part of Texas. It is estimated that more than 400,000 head have been driven out of Texas during the past year alone."

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"There is no doubt in my mind that the tendency which has attained the above startling proportions in a single year is a permanent one, and will grow with every season. For a space fully seven hundred miles long and two hundred broad, along the base of the Rocky Mountains, there is one of the finest and cheapest grazing countries in the world. The valleys, bluffs, and low hills, are covered with a luxuriant growth of grama or 'bunch' grass, one of the most nutritious grasses that grows. It grows from 6 to 12 inches high, and is always green near the roots, summer and winter. During the summer the dry atmosphere cures the standing grass as effectually as though cut and prepared for hay. The nutritive qualities of the grass remain uninjured, and stock thrive equally well on the dry feed. In the winter what snow falls is very dry, unlike that which falls in more humid climates. It may cover the grass to the depth of a few inches, but the cattle readily remove it, reaching the grass without trouble.

"Again, the snow does not stick to the sides of the cattle and melt there, chilling them through, but its dryness causes it to roll from their backs, leaving their hair dry. There is no stabling required; stock 'run out the year round,' and the cost of keeping is just what it will cost to employ herders—no more—and with the great Pacific road traversing it from east to west, it is always within a few days of the eastern markets. The advantages are great, and a new and vast industry is springing up."

#### SHEEP AND WOOL.

This is a subject of so much importance to the welfare of the people and Territory of Wyoming, that I have thought proper to invite attention to the wonderful adaptability of this region, to the cheap and successful raising of sheep and wool. I therefore introduce the remarks of the Hon J. W. Kingman, United States judge of this Territory, on the subject. His opportunities for observation on these points have been extensive, and, after a residence of two and a half years in this region, he is so well convinced of the success which must follow the business of sheep and wool growing on these elevated plains, that he has now introduced a flock of 3,000 sheep upon his ranche near the head of Crow Creek, fifteen miles west of this city. The judge has favored me with the following account of his flock and the manner of treating it:

"LARAMIE CITY, WYOMING TERRITORY,  
"September 18, 1871.

"DEAR SIR: Your favor of the 15th instant, asking for a statement of the facts in reference to our flock of sheep, is received, and it gives me pleasure to reply.

"The flock consists of 3,000 long-wooled sheep, selected with great care in Iowa last summer. We have avoided all merino blood, because we wish to cross up with the Cotswold as rapidly as possible.

"Our object is to see if this region will not produce a superior quality of combing wool, as well as a superior mutton. We are confident that the character of our climate and grazing is so peculiarly adapted to the nature and habits of sheep, that we can carry the improvement of our flocks, in both these respects, to a degree of perfection never attained before.

"Indeed, the improvement in the health, appearance and condition of the sheep thus far is so marked and uniform that one could hardly believe it to be the same flock that came here a few months ago, and warrants the utmost confidence in a permanent and valuable improvement.

"Our cool, dry, even temperature; our hard, gravelly soil; our short, rich grasses; our clear, pure water; our aromatic, bitter plants and shrubs, and our frequent alkaline ponds and licks, must all contribute to the robust health of the animal and produce a growth and development of all its functions in their highest perfection.

"It has been said that the long-wooled sheep are not gregarious, and cannot be well herded in large flocks. We have not found this difficulty. To be sure, 3,000 makes a large flock, and they require plenty of room; but if they are *well left alone* they do not get in each other's way, and do not care to stray. One man can watch them, and watching seems to be all the help they need.

"We build, to be sure, large yards, and long, open sheds, to protect them from the storms, and to keep off the wolves at night; but we shall soon be rid of the wolves altogether, and the bluffs afford sufficient shelter at all seasons of the year.

"There are in this section of the Territory, besides our flock, one belonging to General King and others, of about one thousand; Colonel Dana's, of a thousand; Mr. Homer's, and others, about a thousand; and several parties are now in the States purchasing flocks to bring here. There are also the large flocks belonging to Messrs. Creighton and Hutton, of ten or twelve thousand; and quite a number of small lots, numbering two or three hundred each.

"Some of these flocks have been here two or three years, and each year have shown a surprising improvement. This is particularly so where they have not been too closely herded, but have been permitted to go out and come in pretty much as they pleased. The wool has increased in quantity and fineness, and the mutton has improved in flavor and quality.

"There seems to be no doubt that the best quality of mutton can be grown here, pound for pound, as cheap as beef; and if so, then sheep-raising must be profitable if cattle-raising is.

"Very respectfully, yours,

"J. W. KINGMAN.

"DR. SILAS REED,

"Surveyor General, Wyoming Territory."

I also introduce another excellent and comprehensive letter from Judge Kingman, written to Dr. H. Latham some months since, and published this summer in the doctor's valuable pamphlet on the subject of stock and wool growing in this high, dry, rolling country, which is so favorable for the growth of the healthiest sheep and the most valuable fibers of wool.

*Letter from Judge Kingman.*

"LARAMIE CITY, Wyoming Territory.

"DEAR SIR: Your favor of a recent date, asking the result of my observations on the Rocky Mountain portion of our country in its adaptation to sheep-raising, is received; I hasten to reply.

"It will be remembered that the natural habitat of the sheep, as well as the goat and the antelope, is an elevated mountainous region. They are provided with an external covering and a constitutional system fitting them to endure its rigors and subsist on its peculiar herbage. They may be removed to other regions, it is true, and by careful husbandry made to flourish in hot climates, on artificial or cultivated food, and even in rainy and muddy localities.

"But the multiplied diseases to which they are subjected are convincing proofs that they are exposed to influences unnatural and uncongenial to their constitutions. They require a dry, gravelly soil; a clear, bracing, cool atmosphere; a variety of short, nutritious grasses; and they love to browse on highly aromatic plants and shrubs, like the willow, the birch, the hemlock, and the artemisia. In such circumstances, they are always healthy, vigorous, and active, and produce the maximum of even-fibered wool and the best of high-flavored meats.

"That we have millions of acres answering in all respects to the exact requirements for the best development of sheep, in the production of both wool and meat, is demonstrated by the countless number of antelope that annually swarm over the country, and seem to have no limit to their increase but their natural enemies, the wolves and the hunters. They are always in good condition, healthy, fat, and active; and this is particularly noticeable in the winter and spring, when it might be supposed they would be reduced by cold and want of food.

"It is well understood by wool-growers that the great difficulty in producing a staple of uniform evenness and uniform curve is the variable condition of the sheep at different seasons of the year. The animal organization cannot produce the same quality of growth in extreme cold weather, on dry hay, that it will produce in warm weather, on fresh grass. The result is, that the best quality of wool cannot be grown where the sheep are exposed to the extremes of climate, and particularly where they cannot be kept in uniform health and good condition. If this is true in the growth of wool, it needs no argument to prove that it is true also in the production of wholesome and nutritious meat. A generous diet of rich and various food is required to keep up a rapid and constant growth, and it is quick growth combined with good health that makes the choicest meat.

"I have been familiar with sheep-raising in New England for many years, and although sheep do pretty well on the rocky hills there, yet they are subject to a frightfully long list of diseases, every one of which, however, is ascribed to local and not inherent causes. The one great cause, exceeding all others in the variety and extent of its evils, is the long-continued rainy weather. The ground gets saturated with water, the feet



become soft and tender with the soaking, and foot disease is propagated by inoculation with surprising rapidity. The fleece gets wet, and remaining so for several days keeps the animal enveloped; this produces pustules, scab, tetter, and other cutaneous diseases; everything and every place is soaked and dripping with water during those long storms, and the sheep are compelled to lie on the wet ground and contract colic, scours, and stretches, and other bowel diseases. But here, on our hard, porous, gravelly soil, in a bright, equable climate, with a dry, bracing atmosphere, having abundance of nutritious grasses and a great variety of desirable food, the flocks will find every circumstance contributing to their perfect growth and development. This is such a country and climate as they naturally inhabit. Their constitutions are fitted to its peculiarities, and will produce here their highest possibilities.

"There is no doubt that any breed of sheep will do well here, but for various reasons I would advise the introduction of the best qualities of mutton-sheep in preference to the fine-wooled animals. In the first place they are hardier and more prolific, and will undoubtedly improve faster; and in the second place, while it is possible to overstock the market with wool by importation from foreign countries, it is not possible to overstock the meat-market. We have now 40,000,000 of people, and the annual increase is about 3,000,000; our people are all meat-eaters, the price of meat in our large cities is enormously high, and the annual production by no means keeps pace with the demand for consumption. But in addition to all this, the actual return in wool, from a flock of medium-wooled sheep, will nearly equal in value the net product of a fine-wooled flock. They produce heavier fleeces, and the price of wool bears a better ratio to its cost.

"Most of our flock-masters are purchasing the sheep-flocks of New Mexico and the extreme Western States, with the expectation of getting good animals by crossing. This may be done, it is true, but I do not think it likely to result satisfactorily. It requires too much care and judicious selection, as well as long-continued effort, to get rid of bad qualities and fix permanently good ones. We can get sheep, by going further east, which have been carefully improved for fifty years, and in which characteristics have been developed by a scientific breeding which we may not hope to equal. Such a flock will cost more to start with, and will be worth more, but may not have cost more, all things considered, after a few years.

"Very respectfully, yours,

"J. W. KINGMAN."

The following interesting remarks and statistics from the comprehensive pen of Dr. H. Latham upon the important subject of the wool product of the United States as compared with foreign countries, and the reasons why the Rocky Mountain country can successfully compete with the most favored foreign wool countries, deserve a place in this article. The doctor has given large attention to this subject, and his facts and inferences are worthy of the highest consideration of those who wish to avail themselves of the remarkable advantages which attach to these elevated table lands, for the commercial prosecution of this great industry. I copy from the doctor's late pamphlet:

"Perhaps there is no other branch of American industry deserving so much attention as sheep and wool growing. It is deserving of it, because in all countries and in all ages flocks answered the first necessities of man, yielding both food and clothing, because everywhere, either fed from valley, plain, or hill-side, they have yielded a golden harvest.

"In the present age, wool and the textures manufactured from it stand above competition, either in the immense values invested in them, or in their contribution to man's wants and luxuries. A writer says of the Paris Exposition: 'The emotion most vividly excited by a general survey of the products of the world's industries was admiration of the wonderful qualities of that fiber, which is capable of producing objects and fabrics infinitely surpassing in variety and appearance, as well as in application, those produced from any other material; thus showing itself to be, of all fibrous materials, that of the first necessity to man.' This fiber, we observe, is made more perfect than any other by the chemical elaborations of an animal of high organization, thus surpassing silk, which is derived from an animal of low organic structure. Its specific gravity being the least of all fibrous substances, its tissues are the lightest, warmest, and most healthful; such are the qualities of fiber, which have led every industrious nation to the culture of flocks as the first necessity of its people, which have caused, in every manufacturing nation, the demand to constantly exceed the supply, which have transplanted colonies from the Cape of Good Hope to Australia, and have carried the shepherd emigrant to the steppes of Russia and the plains of La Plata. Such qualities, and the necessities of man, have made the wool production of various nations reach such enormous figures as the following: Great Britain has an annual production of 260,000,000 pounds; Germany, 200,000,000 pounds; France, 123,000,000 pounds; Spain, Italy, and Portugal, 119,000,000 pounds; European Russia, 125,000,000 pounds; making, in Europe, 827,000,000 pounds as her annual production. In Australia, South

America, and South Africa, 25,000,000 pounds; in the United States, 100,000,000 pounds; North American provinces, 10,000,000 pounds; Asia, 470,000,000 pounds; North Africa, 49,000,000 pounds; the whole wool product of the world reaching the enormous grand total of *one billion seven hundred and three million* pounds. In consideration of such figures, no one will deny that wool and sheep growing should take first rank among our domestic industries. It deserves more marked attention than it receives, from the fact that, of all productions of the temperate climate, it is the only one that we are dependent on for our supplies from foreign countries.

*"The wool product of the United States for 1870.*—In 1870 our wool product was 100,000,000 pounds, valued at \$38,000,000. For the fiscal year ending June 30, 1870, we imported of wool and its fabrics to the value of \$42,229,385, while 10,000,000 people in the Northwest are working early and late to raise grain, which is to be shipped for foreign markets, the profits of which, after paying for thousands of miles of expensive transportation, barely pays the producer day wages; they buy clothing manufactured in England, France, and Prussia, from wool grown in South Africa, Australia, or the Argentine Confederation."

For the year ending June 30, 1869, we exported \$82,238,773 worth of bread-stuffs, which cost three-fifths of it to get it to the sea-board. The same year we exported only \$315,881 worth of wool and its manufactured textures. As some one remarks, 'not one-half enough to pay for our imported playing-cards.'

*Where sheep are raised.*—Sheep flourish and are profitable in almost every variety of climate, on all kinds of soil, in all latitudes, and all altitudes. This is evidenced from the fact that the following countries raised wool for exportation to this country in 1870: England, Scotland, Dominion of Canada, all other British Possessions in America, British West Indies, British Africa, British East Indies, Australia, Cuba, Hamburg, Bremen, France, Brazil, China, Argentine Republic, Dutch West Indies and Guiana, Mexico, Italy, Venezuela, Belgium, United States of Colombia, Uruguay, Russia on the Baltic and White Seas, Russia on the Black Sea, Chili, Denmark, Danish West Indies, Austria, and Turkey, countries embracing every known temperature, rain and snow fall, and every character of soil, from the marshy lands of Holland, many feet below the sea, to the high steppes of Asia, between the lofty Himalayas, 15,000 feet above the sea; from countries under the Equator to 67° north of it. Thus we see how readily the sheep adapts itself to such a variety of circumstances. In Holland and Belgium, on the coarse, winter herbage of their low lands, the flocks yield the same long silken flossy fiber that they do on the shorter, drier, and sweeter grazing of the hills of Moravia and England. The fine wool of Paulas, Infantado, Rambouillet, Magritte, families of the merino, is grown in Spain, France, Algeria, Cape Colony, on the La Plata, and in Australia alike. It is true that they adapt themselves to all these various circumstances offered, and climate, but they are acquired habits.

The true home of the sheep is on the hills, mountain sides, and on the elevated plains and table-lands of the interior of continents. Covered as they are with a natural covering against cold, their especial dislike is rain and moist soils. They flourish best on the slopes of the lofty ridges or ranges of mountains, where the soils are from the wear and washes of the rocks of these great upheavals, giving them light, porous, gravelly soils, through which any excess of moisture leaches away.

The first history of sheep was in the interior of Asia, at altitudes fully as high as the interior of our own continent.

In the low lands the herbage is coarser and better adapted for animals which are not of so fine an organization as sheep. Countries of heavy rain-fall keep the covering of the sheep saturated with water, which is not conducive to health or the production of large quantities and fine qualities of wool.

*The table lands of Australia.*—The center of Australia is a high table-land with a small rain-fall, and there the finest fiber is grown that the merino sheep is capable of producing. From that source comes the great bulk of wool from which is made the fine "French broadcloths" and "French merinos." It is sold in special markets in London, and it attracts buyers from all the manufacturing centers of the world. The physical conformation of New Zealand is much the same as Australia, the climate is materially the same. There, in a few years, they have developed the production of the best fibers for delaines. On the great pampas of South America, which are high, diluvial plains, comparatively dry the whole year, and entirely so for ten months in the year, they export 100,000,000 pounds of fine fiber, which is eagerly taken for "clothing fabrics." They have developed the growth of the celebrated "mestiza," the supply of which is not equal to one-twentieth of the demand.

In the interior of Africa, when the colonies had found that the climate was too dry for farming, their attention was turned to wool-growing, and from the scanty herbage growing there, and from a barren waste with a few naked Caffres, it has taken front rank with the producing countries of the best wool.

The great arid interior of Asia is the favorite home of the sheep and goat. From the condition of most of her people in the scale of civilization, it is noted more for the enormous quantity of the production than its fine quality.

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*Adaptability of the trans-Missouri country for sheep-raising.*—All of the trans-Missouri country west of the ninety-eighth meridian to the crest of the Snowy Range, has less than six weeks of rainy season, which is in the month of May, after the cold weather. Usually there is no rain-fall after November till May. The snow is dry and round, and does not adhere to the sheep. There is not an acre, of all the billion of acres of country, that does not furnish summer and winter grazing for sheep. There is winter grazing enough in Colorado, Wyoming, and Montana, to graze all the sheep in the United States, Australia, and the Argentine Republic, the aggregate of whose wool product is 300,000,000 pounds, worth \$100,000,000.

There is plenty of water for countless flocks in the net-work of streams that drain our mountain ranges of their snows.

*Entire absence of disease.*—There is an entire absence of the marshy lands and wet soils so destructive to sheep in the form of "foot-ail." The sheep of New Mexico, Colorado, and Utah have not, after ten years in the two latter Territories, and forty years' experience in the former, developed any local diseases. The universal testimony has been, in all our Territories and States west of the Missouri River, that there have been no diseases among the flocks, and that they have improved in the quality and quantity of the fleeces.

*Profits of wool-growing.*—The great fact of winter grazing will enable our flock-masters to make wool growing exceedingly remunerative. In many instances which have come under my observation here on the plains, flocks have yielded one hundred per cent. upon investment in them.

In countries where either the natural resources or protection makes wool-growing profitable, it makes most wonderful advancement.

The wool industry of South America, South Africa, and Australia does not date back more than a quarter of a century, and now they export 250,000,000 pounds. Iowa, in 1859, had 258,228 sheep; in 1869 she had 2,332,241.

There are many remarkable instances of rapid increase in wool-growing, but there is nothing that shows how rapidly the production can be increased, and how wonderfully the demand increases, so much as the figures of England's importation thirty years ago. Then, 74,000 bales were imported from Germany; 10,000 bales from Spain and Portugal; British Colonies, 8,000 bales; other places, 5,000; total, 93,000 bales. In 1864 there were imported from Australia, 302,000 bales; Cape of Good Hope, 68,000 bales; South America, 91,000 bales; and 219,336 bales from other sources; in all, 688,336 bales. Australia now supplies more than three times the whole amount of foreign wool consumed in England thirty years ago, and the production of South America exceeds the whole consumption then.

*The future of the wool interest of the Northwest.*—With such a sheep and wool-growing country as we have here, "endless, gateless, and boundless;" with such a great increasing home and foreign demand; with such examples of rapid increase in sheep and wool productions, who shall doubt that in twenty years we shall rival Australia and South America in not only the quantity but the quality of their wools, and that the wool-buyers from all the great manufacturing centers of the world will visit our plains in search of the "fiber" susceptible of such wonderful and varied uses, and that with our wool production there will spring up manufactories here and there that shall rival Bradford, Huddersfield, Halifax, and Leeds, in England, and Rheims, El-Beufs, and Roubaix, in France, in the magnitude and beauty of their fabrics?

Along the whole length of the Union Pacific Railway, along the Central Pacific Railway, in the valleys of the thousands of streams, bordered with timber for buildings and fences, these untold millions of acres of luxuriant grazing lands, where sheep can be put down from New Mexico, Iowa, Illinois, Missouri, and other States for two dollars per head, shepherds can be hired for \$30 to \$40 per month, who can readily herd 3,000 head. Thousands of tons of hay can be cut on all the streams.

*Rates of freight to Eastern markets.*—Wool has been carried by rail from San Francisco to Boston for \$1 10 per hundred pounds. Double-decked sheep-cars, carrying 200 sheep, can be had from the base of the mountain to Chicago markets for \$150, thereby putting down fat wethers in market for 75 cents per head. Dressed-mutton carcasses are delivered from the Rocky Mountains, in New York, for \$1 75 per hundred, car-load rates.

*Growth of Wyoming sheep industry.*—The large introduction of sheep into this Territory during the past season is very gratifying. The correct and valuable information that has been spread over the country by Dr. Latham, Judge Kingman, and others, has attracted the most deserved attention, and the result is that large numbers of sheep have been brought in this summer. I hear also of other large flocks that are to come next spring; and I scarcely need say that half the sheep of the United States could find room and food upon our mountain plains without being too much crowded.

The following is a list of the principal flocks and names of owners:

Colonel E. Creighton & Co., on Laramie Plains .....	10,000
Winslow, on Laramie Plains .....	1,500
Sargent, Thomas & Co., on Laramie Plains .....	2,000



Moulton & Co., on Laramie Plains .....	2, 000
Dana & Boswell, on Laramie Plains.....	1, 000
Judge Kingman, Crow Creek .....	3, 000
James Moore, Lodge Pole.....	9, 000
Maynard, Lone Tree.....	1, 500
General King & Co .....	1, 000
Party from Socco, Mexico.....	2, 000
Emory Boston .....	3, 000
Carmichael .....	200

## EXAMINATION OF MINES AND MOUNTAINS.

I thought it might prove serviceable to the interests of the Territory to occupy all the spare time I could from office duties, this summer, in a personal examination of the coal and gold mines of Wyoming, and of the geology of her mountains, as far as could be done without danger from Indians. Last year no one was safe without a military escort more than a few miles from the railroad, on account of them. This year, a small number of armed citizens could safely venture into any of our mountains except the Big Horn, north of the North Platte River, which is claimed as hunting ground by Red Cloud and his tribe.

My first journey was commenced on the 2d of June to the

## COAL MINES.

*Rocky Mountain Coal and Iron Company.*—The mines of this company are near our western boundary, in Bear River Valley, two miles north of the Union Pacific Railroad, at Evanston. They are the wonder of all who visit them, because of their enormous thickness, the fine quality of the coal, and the facility with which it is mined. The vein is over 25 feet thick, but only from 8 to 10 feet in height is being taken out at present. The several openings of the mines are on the edge of a high hill facing west. The vein dips east about 25° or 30°, and the indications are that it extends to a great distance, there being no evidence of much disturbance of the strata; in this respect unlike that at Bear River City, eight miles southeast.

The several engines now being erected there are thought sufficient, with the requisite number of miners, to produce 1,000 tons per day, which amount would barely supply the demands of the Central Pacific Railroad and the mines of Utah and Nevada. The majority interest in this valuable property is now owned, I am informed, by parties largely interested in the Central Pacific Railroad Company.

For the following items of interest relating to the Rocky Mountain Coal and Iron Company, and its operations, I am indebted to Mr. Charles T. Deuel, the superintendent at the mines.

The capital stock of the company is \$1,000,000. The officers are David D. Colton, president and treasurer; Fox Diefendorf, vice-president; H. K. White, secretary.

There are three openings now being worked. The depth or length of main drift of mine No. 1 is 386 feet; thickness of vein, 26 feet; mine No. 2, depth 512 feet; thickness of vein, 30 feet; mine No. 3, depth 165 feet, thickness of vein, 32 feet. The length of the coal-field on the face is three miles.

In the three openings are five steam-engines, with an aggregate of 132 horse-power, and in mines No. 2 and No. 3 are four steam-pumps, two in each mine, and each pump of 10 horse-power. There are employed 175 Chinamen, miners, and laborers; 27 white men, miners, and laborers; 23 mechanics; 5 miscellaneous; being a total working force of 230 men.

The present daily yield of coal is from 220 to 280 tons, gross, with mostly inexperienced hands. The company expect to produce by January 1, 1872, 650 tons daily.

The coal is now sold at the following points: San Francisco, Sacramento, Stockton, San José, Oakland, Alameda, and Valejo, California; Reno, Virginia City, Gold Hill, Battle Mountain, and Elko, Nevada; and at all points on the Central Pacific Railroad, and at Salt Lake City and Ogden, Utah; and the company supplies the Central Pacific Railroad and all its branches and steamers.

There are thirty-five dwelling-houses for the accommodation of the workmen already erected, and fifteen more in course of construction, to be completed by December 1, 1871. There are also at the works three engine-houses, and snow-sheds over the openings, three blacksmith-shops, three sets scales and houses, one carpenter-shop, two stables and corrals, one powder magazine, a store and office, besides an ice-house, butcher-shop, and numerous small buildings.

*Wyoming Coal and Mining Company.*—The Evanston mine of the Wyoming Coal and Mining Company adjoins that of the Rocky Mountain Coal and Iron Company on the south, and is an extension of the same vein just described, though not so thick; and it dips slightly to the south, with its main dip to the east. The product of this mine is used mainly on the Union Pacific Railroad. It is worked by one engine, and its buildings are of stone, and quite substantial.

The parties comprising this company are interested in the Union Pacific Railroad Company, and most of the coal they produce is used for railroad purposes. They have other mines in operation at Rock Springs, and at Carbon, all under the superintendence and management of Mr. Thomas Wardell.

From him we learn that at the Evanston mine the company has now fifty men employed. He gives the thickness of the coal seam at 26 feet, it being intermingled with a few thin layers of slate, none, however, over 5 inches in thickness. The roof of the mine is fire-clay. The analysis of the coal gives water 8.58, ash 6.30, volatile 35.22, carbon 49.90. During the year 1870, they mined from this mine 12,398 tons of coal, and the total amount mined to December 31 of that year was 13,360 tons. All but 20 tons of this was used by the Union Pacific Railroad Company.

The Rock Spring coal-veins, fifteen miles east of Green River, have been brought to the surface in the central portion of the Green River basin by a local upheaval in their vicinity, from the south toward Quaking Asp Mountain. Thus their dip is northward, under the railroad. The veins are from 4 to 8 feet thick, and the coal is of a superior quality, being hard lignite, and quite free from sulphur and bitumen.

I have no doubt that these coals would smelt our iron ores when properly mixed, just as they come from the mine in the raw state, without coking.

The Messrs. Blair have a valuable mine at this place, from which Fort D. A. Russell and other places are now supplied.

Mr. E. P. Snow, our United States assessor, has also lately opened a valuable mine at this point, which is part of the same stratum as the other two just named. I introduce the following statement from him, descriptive of his mine, which he has furnished at my solicitation :

“CHEYENNE, WYOMING, September 20, 1871.

“DEAR SIR: I respond very cheerfully to your letter of the 16th of September requesting information concerning the Rock Springs coal.

“The mine from which this coal is taken is 400 yards from Rock Springs station, on the Union Pacific Railroad, three hundred and fourteen miles west of Cheyenne. It is an open-drift mine. The vein is 10 feet thick, and literally inexhaustible. Its course is from southeast to northwest, dipping toward the latter point.

“The coal is very free from foreign substances, is overlaid with slate, and has below a bed of sandstone, from both of which the coal cleaves freely without waste. It is a semi-bituminous coking coal, of a glistening black color, and brilliant conchoidal fracture. It does not soil the fingers nor crumble into dust on exposure to the atmosphere, but bears transportation and handling better than any coal west of Pennsylvania.

“The analysis of this coal, as given by Professor E. T. Cox, State geologist of Indiana, is as follows: Specific gravity, 1.257; weight of a cubic foot, 78.37 pounds; coke, 54.40; volatile matter, 45.60; ash, white, 0.50; fixed carbon, 53.90; water, 7.50; gas, 38.10.

“As will be seen by this analysis, the proportion of ash to carbon is very small, comparing favorably, both in this respect and in the quantity and quality of the gas and coke produced from a given quantity of coal, with any other coal obtained from the Rocky Mountain coal-fields.

“It is superior to all other coals in this region, both for domestic and mechanical purposes. Thus far it is the only coal that has been discovered in the Territories suitable for the manufacture of gas. For blacksmiths' use, it has superseded charcoal, both in Wyoming and Colorado, and is the only coal used in this Territory by blacksmiths.

“It has been successfully tested at the smelting-works in Omaha, Nebraska, in the reduction of the Utah ores, but owing to cost of transportation has not been extensively introduced there. For steam-generating and domestic purposes it has no superior in the West. It burns with a clear, bright flame, and great heat, making very little ash, and is absolutely free from clinker or sulphur.

“The mine has been worked only one season, but the coal is liked so well that the demand for it is increasing with great rapidity.

“Respectfully,

“E. P. SNOW.

“SILAS REED, Esq.,  
“Surveyor General.”

The following items respecting the Rock Spring mine of the Wyoming Coal and Mining Company are furnished by Mr. Wardell :

Work was commenced in November, 1868, and the company now employ 85 men at this mine. The thickness of the coal is 10 feet, and the analysis gives water 7.00, ash 1.73, volatile 36.81, carbon 54.40.

During the year 1870 they mined 21,109 tons of coal, and the total number of tons produced from November, 1868, to December 31, 1870, was 38,308. Of this total amount, 35,359 tons were consumed by the Union Pacific Railroad, and 2,949 were shipped to private parties.

The Van Dyk and Hallville coal mines are on the border of the railroad, in this vicinity. They are owned by capitalists in San Francisco, though not extensively worked now. The coal of the Van Dyk is the same in quality as those just referred to, and will be in large demand when the silver mines of Utah come to make a proper trial of them in smelting their ores.

The Carbon mines are on the western edge of the Laramie Plains, about fifteen miles northeast of Elk Mountain, and the coal strata were uplifted to the surface by the same forces which upheaved the Elk and Medicine Bow Mountains, after the beginning of the tertiary period, though acting in lesser degree.

These mines produce largely for the use of the railroad, and are but a small part of a large coal-field in that neighborhood, as shown by the discoveries of my deputy surveyors and others while operating in that vicinity this season.

As far east as the vicinity of Cooper Lake a vein of 15 feet in thickness has been discovered this summer, not far from the railroad, which may be of much importance in future in the manufacture of the iron ore of Laramie Mountain, twenty to thirty miles to the eastward.

Mr. Wardell furnishes the following items respecting the operations of the Wyoming Coal and Mining Company at their Carbon mines:

They commenced work in August, 1868, and now employ 110 men at these mines. The thickness of coal is 9 feet. The analysis gives water 6.80, ash 8.00, volatile 35.43, fixed carbon 49.72.

During the year 1870 they mined 53,671 tons of coal, and from August, 1868, to December 31, 1870, the total production was 89,789 tons. Of this amount the Union Pacific Railroad Company consumed 86,608 tons, and 3,181 tons were shipped to private parties.

I continued this journey into Weber Cañon, where I noticed last year the silver-bearing formation as I passed there on the railroad. I found I had not been mistaken, for quite lately some of the Utah silver miners had noticed the similarity of the rock to that found at Bingham's Cañon and the heads of the two Cottonwood Cañons, and had made several discoveries of argentiferous galena, (one or two now owned by Messrs. Fillmore, Millis, and others,) six or eight miles north of Weber City, within the same range which crosses the railroad a little west of the "1,000-mile tree." The formation is limestone, of the silurian age, I believe, and considerably metamorphosed by the mountain upheavals on the west side of them.

I predict the discovery of valuable mines in this locality, as the formation is probably only a northern extension of the rich silver districts further south in Utah.

Near the same locality, but a little farther east, the triassic and cretaceous rocks have been upheaved, and have brought up a large exposure of shales at their junction with the immense conglomerate rocks which form the grand scenery of Echo Cañon.

It is probable that coal will be found here some day by boring, and, perhaps, at no great depth. The coal veins of Coalville, not many miles southward of this point, are said to dip northward under this conglomerate rock toward the railroad; and, as it is of the tertiary age, there is no ostensible reason why coal strata should not be found under it.

We find a very large thickness of this conglomerate rock overlying the rich coal-measures at the mines of the Rocky Mountain Coal and Iron Company, before alluded to, which, in reality, is a part of the Echo Cañon rock, forced asunder by the upheaved arm of the Wasatch Mountains at Wasatch Station.

#### EXPEDITION TO LARAMIE MOUNTAIN.

My second journey was made on the 21st of June to explore the Laramie Mountain from the Cheyenne Pass road northward to the Sabylle "Pass."

We formed a party composed of Colonel Reynolds and Lieutenant Varney of Fort D. A. Russell, Major H. Glafcke, of this city, and myself, and were in the mountains five days.

We went up Crow Creek to the foot of the mountain, where the north fork of the creek leaves the cañon for the plain, with a view to discover, if possible, some evidence of coal at the junction of the tertiary rocks with the older formations, at the eastern base of the mountain. When within a mile or two of its base, we found a stratum of conglomerate along the banks of the creek of the same character and age as that which overlies the coal veins at Evanston. Its dip eastward is but a few degrees, and upon reaching the edge of the mountain (twenty miles north of west from Cheyenne) we found the fracture by upheaval quite abrupt, having brought up and exposed to view the shales which belong to the lower tertiary and upper cretaceous formations, while the silurian limestone had been carried up with the mountain and spread over a large surface, instead of standing vertically against the granite wall, as it does toward Granite Cañon southward and most of the distance northward to the Chugwater Creek.

The bed of shales at this point is very massive and has every appearance of having once been associated with coal-beds below, and presents large blocks of hematite iron-



ore, such as accompany our coal veins. The indications of coal here would warrant the experiment of boring a few hundred feet, perhaps less than 200 feet, to test the important question of workable coal-veins at this base of the mountain.

There are other exposures of this kind at Horse and Chugwater Creeks. Fifteen miles southwest of Cheyenne, a vein of coal was found very near the surface, and supplied fuel to this place before the railroad reached the thicker veins in the Laramie Plains.

On entering the cañon of this fork of Crow Creek the formations on the south side stand vertically, and we found strata or bands of black gneiss, and veins of rusty quartz, intermixed with porphyritic granite, indicating that the ores of the precious metals may be found in this vicinity. During the Pike's Peak excitement in Colorado, the base of this range for miles along this vicinity was staked into "claims" by those who discovered a similarity to the formations found in some of the mining districts in Colorado.

Thence we passed around the west side of Table Mountain to our camp in Cheyenne Pass, where we found one of Clarence King's parties of topographical engineers, also encamped for the night. Next day we crossed to the western edge of the mountain, finding only the coarse, red, feldspathic granite composing the crest, as at Sherman, along the railroad, though presenting numerous veins of quartz, which characteristic continues northward to the head of the Sabyille, at the fifth standard. Instead of finding the top of the mountain moderately level, as where the railroad crosses, we found it impassable for wagons except along its western crest.

Here is the water-shed which divides the waters which flow east and west, and where the head branches of Crow, Lodge Pole, Horse, and Chugwater Creeks take their rise. These branches cut entirely across the mountain, wearing it into every conceivable shape, and furnishing grassy valleys well suited to summer grazing. There is but little timber on this mountain, only here and there small groves of yellow pine, which have been nearly destroyed by fires within the last few years. Good sheep-grazing is found all over it.

The water-shed is formed chiefly by the outcropping crest or edge of the silurian rocks, (lime and sand,) which dip west toward the Laramie Plains. It is remarkable that these rocks should have withstood the fearful drift agencies of early ages so much better than the granitic portion of the mountain, which averages nearly fifteen miles in width, and most of the top torn away by powerful glacial action.

We found numerous deposits of magnetic iron ore on the table-land between Horse and Chugwater Creeks, in the southern part of township 20 north, ranges 70 and 71 west, which is accessible from the Laramie Plains, and will meet the coal there and be manufactured into iron.

Farther north, toward the Sabyille Pass, and before reaching the junction of the ninth guide with the fifth standard, the silurian or silver and copper bearing limestone becomes much thicker, and presents the high-water shed-crest which is so noticeable from Cooper Lake Station, on the railroad. It is here that outcrops of silver and copper veins, and also veins of plumbago, have been discovered this summer by some of my deputies. The external indications will warrant a pretty thorough search there for these minerals in paying quantities.

Our return route was through the Iron Mountain Township, which is now surveyed, and this greatest of iron mountains on the continent is found to be on the odd section belonging to the Union Pacific Railroad Company, but so near to its eastern line and the edge of the twenty-mile limit of granted lands as to create doubts who will yet possess it until after the survey of the opposite township along the railroad, in the vicinity of Cooper Lake Station, twenty miles west.

This mountain of ore presents the appearance of an immense trap-dike, forced up through the inclosing granite. The main branch of the Chugwater cuts through it, presenting a fine view of its dike-like character, and affording convincing proof that it is a massive vein of iron ore, going down to depths unknown, like true fissure-veins of other metals. The elevation, at its base, is 6,500 feet, only about 450 higher than Cheyenne; its summit being 637 feet above the base at the creek.

The valley of Crow Creek, and the eroded valley along the base of the mountain, afford an excellent route for a railroad to convey the ores to this point on the Union Pacific. The ore has been tested on a small scale at Omaha, and found to produce the best of iron. It will be tested on a larger scale, with Wyoming coal, very soon, with very little doubt of entire success.

In the event of success, the railroad company will find it to their advantage to erect smelting furnaces and rolling-mills, which will soon be needed on a large scale, for the necessary repair of their great extent of road.

We found indications at the base of the mountain, at Horse Creek, and about the Chugwater, that coal may be found by boring to the lower stratum of the tertiary, which is not far below the surface, in the valley. The position of the coal, where found to exist, is near the bottom or lower strata of the tertiary rocks.

My next trip was commenced on the 21st of July, to examine

## THE SEMINOLE MOUNTAINS.

These mountains lie west of the North Platte Cañon, about twenty-five miles north of the railroad from Fort Steele and Rawlins Springs Stations.

An expedition had been inaugurated in June by General Bradley, of Fort Sanders, and General Thayer, of Nebraska, (with some others,) to make search in those mountains for silver, some old hunters giving assurance that argentiferous galena had been found there. I was politely invited, but unable to join the expedition.

The result was that, instead of silver, a very rich gold-quartz vein was found by this party, chiefly through the instrumentality of an experienced gold mine prospector, Mr. Ernest, of Laramie City, who accompanied the expedition. The news of the rich discovery soon spread abroad, and miners from all quarters flocked there and soon made further valuable discoveries of silver as well as gold.

Upon making known to General H. A. Morrow, commanding at Fort Steele, my desire to visit those mountains with a view to examine their geological character and form some estimate of their prospective value in furnishing productive veins of the precious metals, the general offered to accompany me with the necessary protection against a possible meeting with hostile straggling Indians, that being one of their haunts last year. We thus prepared for a trip of ten days. Captain Deweese, with part of his cavalry, and Lieutenants Waterbury and Pearson, formed the balance of the expedition.

Our course was north over the great cretaceous ridges on the east side of the Platte, crossing to the west side of the river about twelve miles north of Fort Steele, thence north about fifteen miles to the great cañon of the Platte through these mountains.

The river along this last-named distance cuts through the western edge of a coal basin of considerable magnitude, lying mainly east of the Platte and between the railroad and the mountains on the east side of the Platte Cañon. We found along our route the outcrop of several coal veins; but between these and the mountain we crossed over the outcrops of all the formations which exist between the coal deposits and the azoic rocks.

The southern side of the mountain is faced with a thick stratum of white sandstone, probably of the triassic age, dipping southward at an angle of about  $60^{\circ}$ . Next beneath it I found about a thousand feet in thickness of the silurian, silver-bearing limestone, with the usual Potsdam sandstone stratum separating it from the black gneiss nucleus of the mountain.

Not being able to enter the cañon, either on foot or horseback, I passed over the mountain on foot until I encountered a side cañon, which enabled me to descend into the main cañon in the central part of the mountain. The walls of this cañon are nearly perpendicular for over a thousand feet in height, presenting scenery of the boldest and grandest character.

It is most remarkable that this Platte Cañon should have remained so long unknown to the people of Wyoming. Neither Frémont nor Hayden mention it, though having passed within fifteen or twenty miles of it. Indeed, I never had heard it spoken of by any one in Wyoming; nor do any maps that I have seen afford any evidence of such an abrupt and grand passage of the North Platte through the mountain rim of the Laramie Plains basin.

In my last year's report I stated that the Platte River made its exit from the basin of the Laramie Plains through the pass at the Red Buttes on the old overland road; and I was so informed by those most familiar with the country.

The course of the Platte through this cañon is nearly north, continuing the same course eight or ten miles after its exit from the cañon, then bending around a lone granitic mountain and passing off northeastwardly to receive the Sweetwater River, about ten miles further on. This is its most westerly bend.

We then coursed west along the south base of this mountain about ten miles to Deweese's Pass, in which we camped the second night out. We named this pass for Captain Deweese, because he was the first to go through it with wagons. On the 25th we camped on Deweese's Creek, on the north side of the mountain.

The Ernest gold mine is half a mile west of Deweese's Pass, and about two miles from the western end of this mountain. That portion of the mountain west of the pass is higher than the eastern, though not covering half as much area. Near this mine is the highest peak, which we named Bradley's Peak, in honor of General Bradley, who had so praiseworthily gotten up the expedition for mineral discovery. I measured the height of this peak with my barometer, and found it to be 9,500 feet in altitude, being about 3,000 feet higher than Fort Steele, and 3,000 feet above the base of Independence Rock, on the Sweetwater.

The gold mines are all on this western part of the mountain, and numerous valuable discoveries had already been made. No sedimentary rocks rise much above its base, the whole formation, including the central ridges and other high peaks, being black gneiss, except on the western end, which is red gneiss, so red as to look like a mountain of iron ore as you approach it, as it is far more laminar or slaty than the black gneiss.



The black gneiss, however, has a mottled appearance, resembling fine-grained trap in some respects, the "pepper and salt" appearance arising probably from a slight admixture of decomposed feldspar.

Seminole Mountain No. 2 is situated five miles west of the one just described, (say a trifle north of west,) the intervening valley being occupied by a low mountain of gneissoid rock, nearly imbedded in the drifting sands which form a heavy belt of this material along the southern border of these ranges, all the way from the Platte to Green River. These isolated mountains, made so by frequent gaps or passes north and south between them, are really but parts of the same range extending westwardly from Laramie Peak to the old "South Pass," at the head of the Sweetwater.

Sand Creek runs north through the pass at the east end of Seminole No. 2, heading in the plain south of it, and joining the Platte River a few miles above the mouth of the Sweetwater.

Seminole No. 2 is about twelve to fifteen miles long and three to five miles wide, terminating at Muddy Creek. Near its west end is another pass, formerly, and properly, called Seminole Gap, but now known only as "Whisky Gap," and termed so because of the destruction of a load of whisky at the large spring in the gap by Captain Brown, under orders from Major O'Farrell, of the Eleventh Ohio Cavalry, in July, 1862, who, while on his way from Independence Rock to old Fort Halleck with troops, was annoyed by some whisky peddlers.

Formerly a considerable travel passed through this gap to the Sweetwater mines at South Pass.

The mines of this mountain are principally silver, and the district named after one of the discoverers, Mr. Ferris. The geology of the mountain presents quite a dissimilar appearance to that of the one only five miles east of it. Its upheaval was sudden and violent, wonderfully contorting the gneissoid rocks, which now present a vertical position, with nearly an east and west trend.

The different varieties of gneiss alternate from black, gray, and red, and on the eastern end, where exposed to view, present a singularly striped appearance vertically. The axis of upheaval was on the north side, where the older sedimentary rocks are but little elevated or disturbed, while on the south side the silurian-line strata which composed that face of the mountain, were uplifted with so much violence as to be thrown back past verticality ten to twenty degrees. Here are three or four peaks, one of 10,000 feet altitude, so sharp that I found it difficult to climb to its summit. The others are similar in height to Bradley's Peak.

There have already been a number of discoveries of silver ore here, and judging both from the geology and the character of the ores found, I have no doubt that productive and valuable silver mines will be opened out in this Ferris district next season.

I have forgotten to notice the character of the azoic rocks, in that part of Seminole No. 1 between the Platte Cañon and Deweese's Pass. This is also gneissoid, very black, and much like hornblende in color and appearance, showing numerous veins of white quartz, with occasional intercalations of feldspathic rock of a light-pink color. This part of the mountain has not been prospected for gold, because the miners believe more in ochreous-colored quartz than they do in the white. But rich veins have been found under white quartz outcroppings, and I have very little doubt but good veins of both gold and silver will be found in this part of the range.

Our fifth encampment, July 26th, was on Sand Creek, north of the gap, which has a fine broad valley of meadow land, from which large quantities of hay were obtained in the days of overland travel along the Sweetwater. Here on the 27th we took the old hay-road northward across the tertiary plain to the Sweetwater River, sixteen miles distant. On our right, eight or ten miles away, we passed a lone mountain of feldspathic granite, with several high peaks, which we had visited on the 25th, it being situated on the east bank of the Platte at the point of its western bend.

Just before reaching the Sweetwater we passed an isolated range of the same character of mountain, trending off to the southwest for eight or ten miles. Upon examination I found it to be intersected with numerous dikes of trap, but so black and crystalline in structure in those I examined as to resemble gneiss more than trap.

Arriving at the Sweetwater, ten or twelve miles above its mouth, we proceeded up it about four miles to Independence Rock, (so famous in the early days of overland travel,) and encamped there on the night of the 27th. The shape of the rock is much like that of a large turtle-shell, but has a more striking resemblance, perhaps, to the oblong dome of the Mormon tabernacle at Salt Lake City, though larger. We found it literally covered with the names of emigrants for many years following 1849, chiseled in the hard feld-spathic granite. Here, too, we saw the telegraph poles and much of the old wire that had aided in flashing intelligence across the continent during the early periods of overland staging. But not least in interest here is the old overland emigrant road, so broad and so deeply worn into the surface of the plains as to look more like the route of an army of the magnitude of that of the ancient king Xerxes, than the trail of the modern pioneers who settled the mountain Territories and



the Pacific States. In sandy and loamy portions of the road it is often 60 to 80 feet in width, and worn (or blown) out from one to two feet in depth.

From Independence Rock to its junction with the Platte, fifteen to twenty miles, the valley of the Sweetwater must be twenty-five miles broad. It affords abundance of hay and grass for grazing purposes. The river passes through about the center of the valley. The mountains on the north side curve round to the river at the Devil's Gate, five miles northwest of the rock, and thence trend westward, the river continuing along near their base for many miles, leaving a plain on the south side of from ten to fifteen miles in width, to the base of the Seminole range.

The mountains on the north have less of mineral character than I expected to find, being almost wholly feldspathic, with very little quartz and mica. They, however, present numerous trap-dikes, which show a northeast and southwest course, some being very thick, 100 to 200 feet, and they may yet be found to contain veins of the precious metals. These mountains were uplifted at a very ancient date, long before the deposit of the sedimentary rocks of the adjoining valley, which are horizontal. The crests of these ranges rise about a thousand feet above the valley.

On the 28th we turned southwest across the plain to Seminole Pass, (Whisky Gap,) and encamped in the beautiful mountain cove within the pass, at the spring, and upon the old Rawlins and South Pass road. We found game abundant in this region, antelope, black-tailed deer, and elk, the latter sometimes in droves of fifty or more.

Here the Seminole range almost dies out, the pass cutting no rocks but the narrow, sharp ridge of old red sandstone and silurian limestone, standing in a vertical position, and continuing so along the south face of the mountain to the east of us.

West of this gap the Seminole range takes the name of Sweetwater Mountains all the distance to South Pass, but for the first fifteen miles it consists of only a group of detached hills. Farther west, opposite the Three Crossings, the range rises again, and is clothed with a thick growth of pine, which supplied the telegraph poles for the old telegraph line. Here, also, argentiferous galena has been discovered, and I have very little doubt but that valuable silver deposits will be found there.

On the 29th our eighth encampment was at Brown's Cañon, thirty miles southeast towards Fort Steele, and across a very uninviting plain of sand and sage brush, with but one watering place.

The tenth day out brought us back to Fort Steele, (30th July,) twenty-three miles, feeling well paid for our examination of the country, and that we could safely recommend the Seminole Mountains to the attention of experience, industry, and perseverance, as a very promising new mining district.

I have not written of the several new mines discovered there this season, as I would have done had not General Morrow kindly consented to do so for me, he having a better opportunity to watch the development of the veins and the character and percentage of the ores than I could have. His close proximity to the mines gave him every facility to obtain from miners and others the most reliable information, which is embodied in his intelligent and comprehensive statement, which I have the pleasure to here introduce:

"FORT FRED STEELE, WYOMING TERRITORY,

"September 27, 1871.

"DEAR SIR: At your request I give you a brief description of the Seminole gold mines, situated thirty miles north of this post. These mines, from appearances, are destined to prove immensely valuable, and a short account of the manner in which they were discovered will be interesting:

"Two years ago Lieutenant R. H. Young, Fourth Infantry, while out on an Indian expedition, met three men coming from the direction of the Seminole Mountains, and having in their possession a quantity of quartz, which they said was gold-bearing, though it showed no *free gold*. They gave Lieutenant Young several specimens, which he brought to the post and used for paper-weights.

"Last June, General L. P. Bradley and Captain Thomas B. Deweese, with the approbation of General Augur, commanding the military department, organized a party to explore the Seminole Mountains for silver, having previously ascertained by assay that the specimens of Lieutenant Young were very rich in silver, the assay showing upward of \$2,000 to the ton. The result of this expedition was the discovery of the Seminole gold mines.

"General Thayer, late United States Senator from Nebraska, accompanied the party, and in addition to other claims to distinction may add that of a successful prospector for gold.

"The three men met by Lieutenant Young were all subsequently killed by Indians, and it is not certainly known now whether the present mines are the same as those discovered by them; but from dissimilarity in the ores it is thought they are not, the present deposits being gold, while the rocks in the possession of the men were silver-bearing.

"*Seminole Mountains.*—The chain of mountains of which the Seminole range is a

section has its rise about the forty-first parallel of latitude, near North Park, in Colorado, and runs in a northerly direction to Fort Fetterman, where it bends suddenly to the west, and then trends a little north of west until it meets the Wind River range near South Pass.

"From North Park to Fort Fetterman, and thence to the point where the North Platte River breaks through, making a grand cañon, the range is known as the Black Hills. West of the Platte Cañon it takes the name of the Seminole Range, which it retains until it unites with the Sweetwater Mountains, a little east of the one hundred and eighth meridian line.

"The mines are situated in the Seminole Mountains, about ten miles west of the Platte.

"Geologically these mountains belong to the igneous or metamorphic period, as is shown by the character of their mineral-bearing rock, as contrasted with the succession of later strata reclining against their sides. The highest peak, Bradley's Mountain, is 9,500 feet high, as determined by an aneroid barometer; but the mean elevation of the range is thought to be something less than 8,000 feet. The average width of the range is about three miles.

"The character of the mountain-rock indicates that it has come up from a great depth, being highly metamorphosed; but the slopes are not, as a rule, precipitous, and there is hardly any portion of the mountain, in the vicinity of the mines, which does not admit of roads being built without much labor or expense.

"The mines, as before stated, are located eight miles west of the Platte, in a group or cluster of elevations, of which Bradley's Mountain is the highest by nearly a thousand feet. The principal deposits thus far found seem to be confined to a single elevation, known in the district as Gold Peak. In this, as in other respects, these mines bear a strong resemblance to the silver deposits of White Pine, in Nevada, which are confined to a mountain three miles long and from two to two and one-half miles broad, and which has an altitude of 1,500 feet above the surrounding valleys.

"The country has been imperfectly prospected, and it may be that hereafter the deposits of gold and silver will be found to have a more extensive range than at present ascertained. Many claims, perhaps one hundred, have been located, but the true-fissure veins do not exceed a dozen or fifteen.

"The Ernest, the Mammoth, the Break of Day, the Jesse Murdock, the Slattery, the Edward Everett, and several other mines, have well-defined quartz veins through which gold is disseminated in large proportions. On these and some other claims the work of sinking shafts and running tunnels is being pushed forward rapidly. In all of the above-named locations free gold is found.

"It has been thought by some persons that the various fissure-veins in this district are 'spurs' from the Ernest lode. In this view I do not concur for two reasons: first, because the *strike* of the several veins or fissures does not concur in direction; second, because the vein-matter of the several veins is not by any means the same.

"In some instances rich copper-colored quartz largely predominates; in others, the quartz is deeply discolored by protoxide of iron and other bases. Again, in some of the veins the quartz is almost a pure white, while in others it is greatly decomposed. If anything may be inferred from the *dip* of the several fissures, this may also be urged against the theory of a *single-fissure* formation, for I observed that the dip varies in the several mines from almost a vertical to a slope of a few degrees. The dip is not the same in any two veins.

"I regard it as quite certain that there are at least a dozen true-fissure veins in the district already developed, and that others will be found hereafter I have no reason to doubt.

"I ought to add here that, as a rule, the ledges run parallel, or nearly so, with the axis of the mountain. A true-fissure vein has never been known to give out, though it may 'pinch' or be 'faulted;' and hence the only question, as it seems to me, in this district, is as to the quality of the ores.

"On this subject all that can be stated is, that numerous assays of the ores have been made in Omaha, Denver, and Salt Lake, and in every instance a very large percentage of gold is reported. In several instances the ores have gone as high as \$100 to the ton, and in one instance an assay made at the office of D. Buel & Co., Salt Lake, showed \$350 to the ton, as reported to the writer by Colonel Buel.

"In many of the claims the vein-matter is decomposed quartz, with sulphurets of iron and copper. Experience in California and elsewhere shows that veins composed of such matter hold on well, and increase in richness as you descend.

"In some of the locations I observed that a well-defined *outcropping* of quartz, after sinking upon it a few feet, was followed by a well-defined vein, usually of the same width as the outcropping, of decomposed minerals of the most brilliant hues, blue and red predominating. This is of frequent occurrence in many excellent districts, and is regarded usually as an indication of richness in the lode in which it appears.

"I suppose such phenomena to be the result of water infiltrating from the surface into the fissure before it was wholly filled, or from secretions laterally from the *inclosing*



or *wall rock*, or it may be by injection from below. Warm water is a powerful solvent, and it is by no means impossible that the quartz and other filling matter of the fissure has been lixiviated, leaving a residuum of matter as we here find it.

"However the result may have been produced, it is quite certain that this decomposed matter, whatever it may be, is in all cases extremely rich in gold. By the rude process of a little water and a pan considerable quantities of gold may be washed out of it.

"A word as to the country rock, and I will close this already too long though hastily written letter. The displaced strata are, as a rule, cretaceous, but along the southern base of the mountain there crops out here and there a red sandstone which I suppose to be Potsdam. Whether it is or not will have to be determined hereafter by its relative position or its characteristic fossils. The ejected rocks forming the mountain proper, and which are the wall-rocks of the lodes, are micaceous slate and gneiss, both highly metamorphosed by heat.

"In company with yourself I visited the greater portion of this mountain, and I think you concluded that it would become a valuable mining district, the rock being black and red gneiss, with more of the trappean appearance than that of the South Pass mines, which you thought a good indication of richer mines.

"I am, sir, your obedient servant,

"HENRY A. MORROW.

"DR. SILAS REED,

"*Surveyor General, Cheyenne, Wyoming.*"

#### EXPEDITION TO LARAMIE PEAK.

My next and fourth expedition was to Laramie Peak, in company with Judge J. W. Kingman, Major C. Howe, Major H. Glafcke, Lieutenant Varney, and six gentlemen from New England, graduates of the Technological School of Boston—Professor R. H. Richards, and Messrs. G. R. Lincoln, Elmer Faunce, G. H. Pratt, R. Whittier, and E. W. Rollins—who were desirous of examining the geology of some of our mountains, and of killing some of our countless antelope, elk, and deer, having spent several weeks in the mines and mountains of Colorado.

On the 7th of August we reached the Iron Mountain, which was examined by the party with much satisfaction. Thence we passed northward over the mountain to the head of Sabylle Creek, and encamped upon it eight or ten miles north of the fifth standard, and just below its junction with the old Fort Halleck and Fort Laramie road, which runs through the Sabylle Pass.

Here we remained a day to examine the mountains west of the road. To our great astonishment we found an almost total change in the geological features and characteristics of the Laramie range in this vicinity. The red sienite gives place largely to the black and gray gneiss and gray schistose granites.

I visited a low, oblong, rounded mountain, about five miles west of our camp, which glistened in the sun like glass as I approached it. I found it a small detached mountain of black gneiss, very slaty in structure, and trending east and west, the line of stratification running the same way, and the layers standing vertically. It presents a very striking exhibition of black gneiss slate, with some show of white quartz veins. On its north side, the gray alternates with the black gneisses, yielding more readily to the eroding effects of the elements, and contains larger and richer-looking veins of quartz.

On the east side of the creek are several detached mountain knobs, the crests of which are formed by the high outcropping edges of the silurian limestone, facing west, but which dips down their eastern slopes at an angle of  $40^{\circ}$  to  $60^{\circ}$ .

In this vicinity, the red granites no longer continue to constitute the main rock of the Laramie range, the gneissoid rocks here beginning to contend for the mastery, and continue thus to do for the next thirty miles, to the Laramie Peak. The range northward is made up for this distance of detached mountains, and some very high peaks. Between these the great glacial currents from the west tore their way through, and grooved out the river valleys and broad ravines of the adjacent plains eastward. Four deep and rugged cañons cut through the entire range, the most southerly being the Sabylle Cañon, then the Laramie River Cañon, the Collins Cañon, and the Laramie Peak Cañon.

The line of upheaval is also changed; for while the greater force seems to have been exerted north and south along the course of the range, it has been thwarted by east and west lines of upheaval, thus folding up the formations in the latter direction and affording intervening grooves for the early play of the glacial forces.

In passing northward along the range, we found the gneissic and granitic beds in nearly a vertical position, black and gray gneiss alternating with seams of quartz and feldspar, and now and then a bed of rather massive feldspathic granite. Sometimes these are very thin, and the gneissic beds predominate, thus frequently presenting the appearance of black, massive dikes of black gneiss forced up through the granites.



We found the strongest evidences of gold and silver veins in this vicinity, along the Sabylle Creek, but had not time then to explore for these minerals.

We followed down the Fort Laramie road to John Richards's ranch, on the east side of the Sabylle; thence across the Sabylle and the Laramie River in a northwestern direction about twenty miles, to the mouth of Collins's Cañon, at the sixth standard line of the United States surveys.

We camped about a mile east of the mountain, on the trail of my surveyors, who had only two weeks before run the sixth standard line over the mountain; but on looking up at its high unbroken crest in front of us, it was thought impossible, by most of our company, to find any pass for wagons. While hunting for a cañon or passage through, I coasted north along the base of the mountain fifteen to eighteen miles, and crossed to the north side of the north fork of the Laramie River, in the vicinity of Big Cottonwood Creek, where I found a large plateau, some miles in extent, of black gneiss exposed to view, and exhibiting a fine display of quartz veins, some running with and some across the edges of the slate, which has a nearly vertical dip or position. This, I believe, will prove to be a fine field next season for prospectors for gold and silver. It is almost an exactly similar formation to that in which the Sweetwater gold mines are found.

Next day, having found Collins's Cañon, through which deputy surveyors Thomas and Hay, and twenty cavalymen for protection, had passed with four wagons, we determined to make the attempt to follow their trail through the mountain.

It is the blindest-looking cañon I ever saw entered with teams—so crooked and narrow, the sides so high and vertical, and its mouth so closed by jutting walls of rock, that no human being would suppose a passable cañon existed there until after entering it, and not then but for the trail. Every one would exclaim, every few hundred yards, that he was at the end of it, and hemmed in by towering mountain walls. We found an older trail within it than that of the surveyors, for old poles and brush filled many of the crossings of the tortuous spring-branch.

I have since learned that the famous mountaineer, Bridger, who in early days knew most of the passes and cañons throughout the Rocky Mountains, piloted Colonel William O. Collins, of the Eleventh Ohio Cavalry, with a squad of his soldiers, through here, from Fort Laramie to Fort Halleck, at Elk Mountain, in October, 1862. A pass for a wagon-road between the two forts had been found in August of that year, (the Sabylle Pass,) and all the transportation wagons took that route, it being a very good road and the cañon short. But Colonel Collins wished for a shorter route, and Bridger told him of this cañon and led the squad through it. The colonel afterward used it for his mounted men, and it took the name of "Collins's Cut-off;" but it has not been used since, except by hunters, and will hereafter bear its proper name. Colonel Collins passed through it in March, 1863, with forty-six of his cavalry, for Fort Halleck, not dreaming of danger from a sudden change of weather; but before he could cross the Laramie Plains a sudden snow-storm overtook him, filling the air, blotting out his trail, and so turning him out of his course that he well-nigh lost his life. Several of his men scattered, remained out all night, and were found dead next day on the plains, south of the point where Medicine Bow Station, on the Union Pacific Railroad, now is. Mr. Herman Haas, of this city, was one of that ill-fated party, but successfully reached the fort with the colonel.

I have thought it proper to preserve this little historical narrative of an important cañon, and also that of Whisky Gap, at the Seminole Pass, associated with the same Ohio regiment in the late war; for Collins's Cañon will be visited often in future years by lovers of grand, picturesque, and awe-inspiring mountain scenery. The beautiful groves of pine along its sides, and upon the mountains throughout its length, add vastly to the interest of a trip through it, to say nothing of its narrow defiles, its ever-changing, zigzag course, and the towering mountain crests which overlook it.

It follows closely along the south side of the sixth standard-line, all the way through the mountain, which line crosses over the summit of the highest peak of the range, (a sort of twin-brother to the Laramie Peak,) and to which my deputies have attached the name of Reed's Peak in their field-notes; probably from *chagrin* that I should have selected so rough a line to be surveyed. Its altitude is about 10,000 feet, it being a trifle less than Laramie Peak. At its base, three miles or more from our entrance of the cañon, we reached a fine spring of nearly ice-cold water, nestled in a pine grove at the mouth of a side-cañon, where we halted and took a sumptuous meal, all the while feasting our imaginations upon the grandeur and beauty of the scenery.

The rocky walls of the cañon thus far were composed of gray gneiss, alternating with occasional beds of black gneiss. The mountain before us presented on its eastern face lofty, vertical dikes or layers of black and gray gneiss, with intercalated seams of red granite, thus giving a columnar or striped appearance to the side of the mountain, by these alternating colors of red, black, and gray, reaching up to its very crest. The strike of these vertical beds of gneissoid and granitic rock is nearly east and west, similar to that referred to fifteen miles south of this point.

This locality looks most favorable for gold and silver, and will no doubt repay a

thorough search for veins of these minerals. Geology will prove to be a deceptive teacher if mines of the precious metals are not found hereabout.

Leaving the spring, and ascending a dividing ridge of about 200 feet altitude, we followed the trail along the south edge of the high mountain-peak just described, to the place for descending deeper into the cañon, and along which we proceeded to the western base of the mountain, where we camped at a spring in the valley that heads up northward in the direction of Laramie Peak, which is about twelve miles distant.

Here again we find a great development and a large area of the gold and silver bearing rocks of black and gray gneiss, in heavy beds, nearly vertical, alternating with beds of red granite as we approach the Laramie Peak. The separating line between the black and gray gneiss-beds generally furnishes veins of iron-stained or white quartz, the latter the most conspicuous on the surface. The strike of this group of rocks is northeast and southwest, or nearly so, being similar in this respect and in their color and composition to the gold-bearing rocks at the Sweetwater and other gold mines. The black gneiss slate is perhaps darker and more hornblende in appearance than the above named, but its line of bearing is the same, the seams of quartz similar, and trend in the same direction, and the surface aspect presents an appearance quite like that around some of the best mining districts in Colorado, as I am informed by those who have seen both.

The silver mines of Georgetown, Colorado, are found in a similar formation to that in this vicinity, and there is also a striking resemblance between these and the rocks that inclose silver veins in the West Seminole Mountain.

Our party could not reach the Laramie Peak from the south, even on horseback, it being cut off from the Laramie Plains by a deep and impassable cañon of many hundred feet in depth. Myself and Professor Richards, of the technological school at Boston, led our horses into it, down a most precipitous point, and rode out along its eastern base to the plain which looks toward Fort Laramie. The peak rises 3,000 feet above the summit of the pass, between the cañon and plain, and almost 4,000 feet above the bottom of the cañon.

Laramie Peak will yet become an attraction for tourists and summer visitors equal to Gray's Peak in Colorado. There is far more grandeur and sublimity connected with the Laramie Peak and its surroundings than with the peak just named. Its base has not so great an altitude, but it rises higher above its base, which, together with the wild and imposing scenery of the deep cañon that cuts its southern side and carves its way eastward to the plains through the entire Laramie Mountain, gives to the whole scene the highest degree of interest and delight.

The boundless view from its summit possesses more beauty and grandeur than any other in Wyoming, because it is situated in the gate of mountain ranges to the north and south, and overtops them all. It also commands a view of the whole Laramie Plains on the southwest, and the everlasting snow-clad peaks of the Medicine Bow Mountain beyond, while to the east and northeast the great plains around Fort Laramie lie before you hundreds of miles beyond the limits of your vision.

When a railroad shall reach that vicinity, as it will in reasonable time, the summer tourist will not hesitate to visit it, nor to admit that I have not overrated the scenery.

The cañon last described rises in the northeastern part of the Laramie Plains, and becomes the north fork of the Laramie River, after it passes the mountain and enters the plain on the east. Its scenery is almost as grand and imposing as that of the one we passed through; but it is hardly possible that wheeled vehicles will ever pass through this, the channel being so narrow and the cliffs so abrupt.

The Laramie Peak is readily accessible with pleasure carriages from Cheyenne, by taking the military road toward Fort Fetterman, and at its crossing of the Bitter Cottonwood Creek, turning west, going up its valley, there is a smooth ride of twenty miles to the peak.

Dr. Hayden describes this vicinity as follows: "From our camp on the Laramie we enjoyed one of the beautiful sunsets which are not uncommon in this western country. But this was a rare occasion, for the sun passed down directly behind the summit of Laramie Peak. The whole range was gilded with a golden light, and the haziness of the atmosphere gave to the whole scene a deeper beauty. Such a scene as this could occur but once in a life-time.

"From Laramie River to Bitter Cottonwood our road extends over broad, grassy plains. Upon our left the mountains are in full view, and the grassy plains seem to extend to the granite foot-hills. The scenery in this region is very attractive, as well as instructive."

The peak is composed of gray gneiss almost entirely, as far as I could examine it, and silver ore has been found near its northern or northwestern base.

Next year, if the Indians remain peaceable, mines of silver and gold will, no doubt, be opened both in this and the other three localities found on this trip of exploration. But the immense bear tracks, freshly made, and the Indian pony tracks found in this cañon, made us feel that on our next visit there we would at least have guns and ammunition in our hands.



The Laramie River Cañon is, as I am informed, equal for bold and rugged scenery to the other three which I have enumerated, but we had not time to examine it. It cuts off the mountain rather diagonally, its eastern opening being only five or six miles south of the Collins Cañon, where we entered it. This cañon will afford valuable water-power, secure from overflow of banks, by inserting dams in the Laramie River near its entrance upon the plain.

The valley of the Laramie is broad, and affords fine grazing for cattle and sheep all its way down to Fort Laramie.

On the 15th of August we left our camp at Howe's Spring, south of Laramie Peak about three miles, and proceeded southwest along the high ridge in that course, and entered the Laramie Plains a mile or two southwest of the intersection of the sixth standard and ninth guide meridian. Up to this point we were constantly in sight of the outcropping edges of the gneissic and granitic rocks, which spread out over an area of eight or ten miles south and southwest of the peak.

I should here state that these gneissic rocks, in their line of bearing, trend northeast and southwest, and are the result of the same great lines of upheaval action which manifested their power in the region of the Medicine Bow and Elk Mountains, though they exerted less power under the Laramie Plain Basin, and rose again in the region of Laramie Peak. While standing on the summit of Elk Mountain, early in September, I could see the evidence upon the plain below me of the direction this uplifting force had taken, in the long lines of fracture of the sedimentary strata off to the northeast, toward the Laramie Peak.

In most of the principal mining districts of Colorado, Wyoming, and Montana, the northeast and southwest strike of the precious mineral formation is found to exist, though they are sometimes turned out of their course by local outbursts of the igneous power.

Laramie Peak is the focus, apparently, of several radiating lines of upheaval, one toward the south, (the Laramie Mountain,) another north, toward Fort Fetterman, another southwest, toward Elk Mountain and the Medicine Bow, and still another toward the west, reaching all the distance to the South Pass, at the head of the Sweetwater, over a hundred and fifty miles.

On this line we have what are improperly termed the "Black Hills," extending west from the peak to the deep cañon of the Platte; west of this the detached Seminole Mountains, and farther on the several Sweetwater Mountains on the south side of the Sweetwater River. Between the peak and the Platte Cañon these mountains widen out northward toward the great northern curvature of the North Platte, and have not been explored by any one, except along their eastern base by Dr. Hayden on his route to Fort Fetterman.

Judging from their geological appearance at Platte Cañon and Laramie Peak, I feel confident that the precious minerals will be found within them, at least silver, if not gold.

On August 16th our expedition returned over the Laramie Plains to the railroad, and on the 17th reached Cheyenne, having been absent twelve days, and finding only two ranche cabins on our whole route, up to the last day, when we returned to the railroad. But the country we passed through would sustain hundreds of thousands of sheep and cattle, only needing the expense of a few herdsmen and a small outlay for ranche buildings to insure large incomes from this source to hundreds of families.

#### SWEETWATER GOLD MINES.

My fifth journey was commenced August 23, for the examination of the gold mines of the South Pass or Sweetwater district. I left the railroad at Bryan, on the 24th, in company with our delegate, Hon. William T. Jones, in one of the fine coaches of the tri-weekly stage line of Messrs. Huntley & Co.

The distance is one hundred miles, in a northerly direction. We crossed the Green River to the east side, at Smith's ranche, eighteen miles north of Bryan, where we intersected the old overland emigrant road on its Fort Bridger and Echo Cañon route. The stages follow this road to Pacific Springs, (within the old "South Pass,") on the dividing ridge of the continent. From Green River to Edward Mann's ranche on the Big Sandy is thirty-two miles. This is the half-way house, and affords very comfortable quarters.

Thence to Little Sandy is eight miles, to Dry Sandy sixteen miles, to Pacific Springs fourteen miles, to Sweetwater River four miles, and to South Pass City eight miles, making fifty miles from E. Mann's ranche to South Pass City. Mann's ranche at Big Sandy, and Henry Smith's ranche at Green River, are the only two houses or ranches on this one hundred miles of stage line, except a hay ranche at Pacific Springs occupied only by men. The two first named furnish meals and very comfortable accommodations for travelers, both landlords being New York men, I believe.

Eleven or twelve miles before we reached Mann's ranche we crossed "Simpson's Hollow," where, we were informed by the driver, a train of emigrants under charge of



Captain Simpson, moving to Oregon, in 1857, were attacked by the Mormons, and the whole party murdered, except a few children. This was at the time of the Mormon war, when all parties on the road, moving west, were looked upon with suspicion. The wagons were burned and the irons gathered up and *cached* in a large pit dug for the purpose, which can still be seen at the side of the road.

A year ago last summer the stage teams were stolen from Mann's ranche by the Indians. But this summer, owing probably to the new policy of feeding the Indians, we could travel to Sweetwater without molestation, or any protection except from the fire-arms of the passengers.

We saw very little game. None of those droves of elk, antelope, and black-tailed deer, such as we noticed on the trips to Seminole Mountains and Laramie Peak, were to be seen on this road. A few antelope appeared near the creek bottoms, where there is grass, but the plains of the Green River Basin produce very little but sage brush, which is the reason of so little game.

South Pass, through which the stage runs, is about ten miles wide, extending from the Steamboat Buttes, near Pacific Springs, and the southeastern terminating point of the Wind River range, which is improperly called Sweetwater Mountains by the inhabitants. These mountains lie northwest of the pass, which is merely a gently undulating, elevated plain, so gradual in elevation, and so like hundreds of similar ridges which we find upon the plains, that you cannot realize you are passing over, in the distance of two or three miles, the continental crest between the Atlantic and Pacific Oceans. By the road it is only three miles between the running waters that flow to the two oceans. The altitude of the pass is 8,000 feet.

On the morning of leaving Mann's ranche, the snowy peaks of the Wind River Mountains, sixty to seventy-five miles north, were soon visible through the transparent atmosphere of these high altitudes. In the morning sun they seemed only a short way off, and loomed up along the horizon, with a sharp, clear outline that rendered the view most grand and imposing. Frémont's Peak and the snowy peaks east of it were clearly defined, though so far away.

After passing Pacific Springs the granites and gneisses soon make their appearance. Close to the crossing of the Sweetwater the black gneisses begin to outcrop with intercalated beds of granites, as found about Georgetown, Colorado. The granite beds disappear soon after passing the Sweetwater River, and as you approach South Pass City the dark gneissic slates are the only formation.

These slates lie up against the eastern face of the Wind River Mountains, beginning at their southern point at the Sweetwater, and sweep around the northwestern curve in the mountain, in a northeasterly direction, twenty to thirty miles. The area of these gneissoid or "metamorphic slates" is about ten miles wide and twenty or thirty miles long, which is about as large as the mining district of Freiburg, Germany, so renowned over the civilized world for its great school of mines and the skillful manner in which they work their metallic veins and separate their ores.

As you enter the cluster of mines at South Pass City you at once find yourself surrounded on all sides by metamorphous, hornblende rock, and gneiss slates of a brown-black color, but not so black and sparkling as the gneissic slates south and east of Laramie Peak and on the west side of Sabylle Creek.

The "country rock" which incloses the gold mines of this mineral belt from this point northeast to the Miner's Delight mine, a distance of eight to ten miles, is entirely metamorphous and azoic, and not intercalated with beds of granites, as seen eight miles south, where the gneisses alternate with them.

The geology of the mineral-bearing rocks is very uniform in this district. The strata are folded and tilted considerably, much as they are in the eastern Seminole Mountain, and, like the latter, vary considerably in strike and dip. The rock is quite hard, and has therefore resisted the decomposing influence of the atmosphere and the tremendous glacial currents which, in ancient days, swept across here, leaving the rocks clear of debris; which is a fortunate circumstance for the pioneer miner, who is thus saved much time and money in prospecting for the gold veins.

Much of the surface is so bare, and the large outcroppings of quartz so plainly visible, sometimes for miles in about the same direction, as to have rendered successful prospecting a matter of small outlay to the miner. Very close to, and parallel with, the heavy quartz vein upon which are located the Cariso, Young America, Wild Irishman, and other valuable mine shafts, I noticed a heavy outcropping bed or stratum of gray talcose slate, which experienced miners ought to have clung to in their first prospecting attempts with even more tenacity than to the veins of quartz in the dark gneiss rocks. This bed of gray talc slate is very hard, and less easily broken than the gneiss.

An English mining company has bought the Wild Irishman mine, which is supposed to be an extension of the Cariso lode, and are now running in a tunnel (adit level) from the foot of the hill in Hermit Gulch, to intersect this lode at a depth of 200 or 300 feet below the crest of the hill.

Mr. Henry Rickard, their agent, and a practical English miner, has shown excellent judgment in adopting this plan of proving the mine. He expects to build his quartz-

mill in this gulch, and can run out the ore upon a tramway in this tunnel, and also use it as an adit level for drainage when it shall be necessary to use pumps. The tunnel will also cut all lodes in its passage to the center of the hill, under the shaft, now 80 feet deep.

When I examined the head of the tunnel, then excavated over a hundred feet and not far from the talc stratum above alluded to, the changed and pyritous character of the rock indicated a rich vein very close at hand. I am quite confident it will do more to prove the value of the veins in that vicinity than all the shafts that have been sunk; and I sincerely congratulate the mine owners in that district upon the fortunate event of having English capital and sound mining experience enlisted in the proper development of some of the mines in that locality.

The material spoken of at the head of the tunnel appeared to be the same as found at the Cariso mine shaft, where one or two hundred tons of it had been thrown over the dump piles as refuse rock, but which, upon analysis in London, was found to contain \$70 in gold per ton. I will introduce this analysis in referring to that mine. This rock differs in grain and color from the wall rock of the vein, and is no doubt part of the "vein-stone" of the lode—the mineral portion being about 50 per cent. iron.

The lodes of the district differ considerably in their strike (course) and dip. The Cariso bears north  $60^{\circ}$  east, while the Young America, only three or four hundred yards southwest, and supposed to be on the same vein, bears north  $80^{\circ}$  east. The Buckeye State, a mile or more north of Atlantic City, bears north  $40^{\circ}$  east, and the Miners' Delight, at Hamilton, four miles farther to the northeast, bears the same, north  $40^{\circ}$  east. The strike of the nearly vertical strata is generally about northeast and southwest, and the inclosed lodes or veins ought to run in the same direction if these strata were sedimentary anterior to their metamorphism, and the mineral material was deposited between those beds or strata *before* that great change occurred.

But, as in California and other gold districts, the lodes do not always follow the line of cleavage or the strike of the strata. It is quite evident, therefore, that all these productions of the eruptive forces were injected into the rocky strata either at the time of, or subsequent to, the elevation of the metamorphic nucleus. They could not otherwise properly be considered true fissure veins, filled from the "vasty deep" of the igneous center, which experienced miners so like to contemplate.

It is natural to suppose that in the filling of veins with mineral matter the lines of greatest weakness would be followed by the material, pressed onward or upward by the igneous forces which set it in motion. This is the case with the true fissure veins in the granites, and why not so with the gold and silver veins in the metamorphosed gneisses?

My examination of this district very much strengthened my confidence in the permanency and future productiveness of its gold lodes, for I had previously understood that their course was entirely confined to the general strike of the slaty strata, and found in the direct line of their cleavage; and though in one sense "contact veins," they had not the virtue or strength of such veins, which occupy the plane of division between rocks of *different* age and character, and are generally rich, though not always permanent in depth and length.

It was this variation in the strike and dip of these lodes, as compared with the strike and dip of their inclosing strata, that enlarged my confidence in their permanent value. I expressed this confidence to the citizens and mine owners, and predicted that the doubts of some of the owners would in reasonable time be dispelled by just such an improvement in the mines as had been witnessed in Colorado by the introduction of capital, economy, perseverance, and skillful mining.

The dip of the lodes varies from  $50^{\circ}$  to  $90^{\circ}$ , and is mostly to the northwest, which is another evidence of their true fissure character, the dip of the mineral matter being toward the granitic nucleus. They vary in width from one to twenty feet. The gold-bearing quartz of the vein is impregnated with oxide and silicate of iron. Some of the gold quartz, however, is of a leaden colored white, of greasy appearance, and fine grain, like that of the Miner's Delight mine. The dark quartz is the most common, and the selvages of the lodes frequently show a red-stained, decomposed quartz, which can be readily crushed with the thumb and finger, and is generally richer in free gold than the compact quartz.

The gold is of good quality, but not very fine. It averages 850 fine gold. The base metals are quite rare, but no doubt they will appear at greater depth, when the vein will be likely to increase in richness, though more expensive to treat. The yield is from \$20 to \$40 per ton. The richest lodes are only from one to three feet wide. The ore from these has sometimes yielded \$100 per ton.

Hundreds of lodes have been discovered, but many will, perhaps, not pay to work. Numerous mills have been erected, but some have been burned, and one was removed to Utah this fall, belonging to men who had been sold in purchasing a non-metalliferous vein of quartz, though the largest, perhaps, of any in the district.



But more mills will have to be erected as soon as mining capital and more experienced miners are induced to take hold of these mines in earnest.

South Pass City is the first of the mining towns reached on the stage route. It is located in the narrow valley of Willow Creek, between bluffs of hornblende or gneissoid rock. Looking west and northwest about thirty miles distant, the main range of the Rocky Mountains raises its crest, with snow-covered peaks, high above the surrounding prairies and foot-hills.

The Sweetwater River heads on the southwestern side of this range in a beautiful lake about forty miles northwest of South Pass, and hence the name of Sweetwater Mountains is given to the southeastern extremity of the Wind River Range, which is quite improper, as there is no break in the Wind River Mountain until it reaches the Sweetwater.

In this vicinity, where both the Sweetwater and Big Sandy head, there are large tracts of land quite well adapted to agriculture and grazing, and it is here the overland road called "Lander's Cut-off" is situated. A little above this, on the Green River side of the mountain, gold has been found, and gold and silver mines will be found along that slope all the way to the head of Green River as soon as danger from Indians shall cease, which now prevents the miner from exploring and prospecting that part of the country.

One of the best lodes or mineral belts in the South Pass district commences within a few hundred yards of South Pass City, and bears off to the northeast. I will mention some of the principal mines upon it.

The Young America mine is the first one of note, only 300 or 400 yards north of the village, and is situated west of the Cariso Gulch, which was found so rich in placer gold. It is owned by an Ohio company, A. G. Sneath, superintendent. There are two shafts about 80 feet deep, where the vein is about 2 feet wide. The strike of the vein is north  $86^{\circ}$  east, the lode perpendicular. The ore is said to be worth \$40 to \$45 per ton of quartz, which is a whitish blue, and carries free gold. This company had a fine mill of 10 stamps and a 20-horse power, which I saw in ruins from fire, in Hermit Gulch, half a mile distant. There is an engine, and good building over the shaft, for hoisting and pumping.

The Cariso lode is situated upon the hill, east of the Cariso Gulch, about half a mile from South Pass City and quarter of a mile from the mine just described. Some suppose it to be on the same lode as the Young America, but its strike is  $26^{\circ}$  less, being north  $60^{\circ}$  east. It was the first discovered lode in the district, by H. S. Reedall, in 1867. The party was soon attacked by Indians, and three killed. In the winter following the mining was resumed, and from the croppings of the lode, which they crushed in a hand-mortar, \$1,600 in free gold was obtained, and they washed out \$7,000 more from the débris in the gulch below the vein. The main shaft is about 210 feet deep, and worked by an engine. Their stamp-mill is on Willow Creek, and run by water power.

The owner, Mr. Thomas Roberts, has worked the mine with considerable skill and industry, and has made it pay its way, even to the building of a stamp-mill and engine-house, and placing an engine in it. He visited London this summer, by the invitation of some mine capitalists, who have purchased two-thirds interest, I am informed, for \$100,000, and it will now be worked with that energy and skill which will probably result in greatly enhancing the reputation of this important mining district.

The vein stone, which had been thrown away, and which was found to contain \$70 per ton in gold, will now be made to impart its treasure. It holds about \$15 per ton of free gold in mechanical combination, and the remaining \$55 per ton is probably in the state of sulphuret or other chemical condition, and will have to be extracted by other methods.

The length of the lode is understood to be 3,000 feet, with the discovery shaft near the center; but some of this distance is yet owned by individual parties, in 200 feet claims, and thus there are other shafts than the one the engine is on. Several levels have been run out from the shaft. The dip of the lode is  $75^{\circ}$  southeast. The average width of ore streak is 3 feet, between well-defined walls of hornblende gneiss. The yield of the mine per month is about \$5,000 or \$6,000, the capacity of the water stamp-mill allowing only about this much. The following analysis of the blue sulphuret of iron, as analyzed by Messrs. Johnson & Son, London, was furnished me by Judge Steck, of the firm of J. W. Iliff & Co., bankers at South Pass. Iron 50.52, copper 0.20, sulphur 33.90, gold 11.77, silver 1.56, lime 0.75, carbonic 0.45, silica 0.85, equal to 3 ounces and 18 pennyweights of fine gold to 2,000 pounds of rock, of which blue rock millions of tons can be easily and cheaply obtained.

The Wild Irishman is supposed to be on an extension of the Cariso lode, upon the crest of the same ridge, several hundred feet northeast. The main shaft is 78 feet deep. The vein is about the same width, and the quartz yields nearly the same per ton as the Cariso. It is owned by the London company before referred to, 1,000 feet on lode; and I am just now informed, while writing, that this is the company that purchased two-thirds of the Cariso mine from Mr. Roberts, and will now work both of



these lodes with all the necessary energy and capital. The results will be watched with great interest by all the other mine owners of that region.

Mr. Rickard, the superintendent and part owner of both mines, I am informed will enlarge his operations upon the most approved scale of mining, and will doubtless erect a steam stamp-mill in Hermit Gulch, near the mouth of the tunnel he is running to the Wild Irishman shaft, as the water-mill of the Cariso will not be able to crush half the mineral rock of both mines. They also own the Duncan lode, near by.

The Buckeye Boy is 300 or 400 yards east of the Wild Irishman, at point of hill on Hermit Gulch. A shaft is sunk, and some drifting done, the material from which indicates a fine vein when fully prospected, as it appeared to be in close proximity to the stratum of gray talcose slate before mentioned. Two industrious miners were the owners, and were at work upon it.

The Carrie Shields lode, situated three-fourths of a mile east of South Pass City, on the north side of Willow Creek, is owned by W. C. Ervin, of South Pass City, to the extent of 1,000 feet on the vein. The strike is northeast, shaft 90 feet, width of vein 2 to 6 feet. The ore yields from \$15 to \$37 per ton by ordinary stamp process.

I descended into the shaft and found the vein well defined, a good quality of quartz, and I procured some of the decomposed selvage of the vein, which I found quite rich in gold, as shown by washing. I also saw free gold in the quartz, and have no doubt it is a valuable mine. A short tunnel run in from the gulch would intersect the vein about 300 feet below the surface at shaft. The owner is not working the mine this season, and offers it to capitalists for \$10,000.

There are numerous other discoveries of gold veins in the vicinity of South Pass City, with shafts ranging from 20 to 50 feet deep; but as no work is being done on them now, not much could be learned of their yield per ton. These are the Robert Emmett, Nellie Morgan, Golden Gate, Garden City, General Grant, Austin City, &c. Messrs. Thompson & Kimbrough have a prospect named the Tennessee, which, judging from the specimens shown me, promises well.

The Mary Ellen lode has yielded some very rich ore in the croppings, dip 45° north. The hanging wall consists of slates, the foot wall of sienite. Some of the ore is reported to have yielded as high as \$104 per ton, owing, no doubt, to its contact with the sienite.

The Barnaba, owned by Foster & Co., shows a fair yield of ore, vein 4 to 6 feet wide. It is not worked this season.

Atlantic City, four miles northeast of South Pass City, is situated on Rock Creek, in the midst of valuable mines, and, like South Pass City, has not the population that its advantages and capacity warrant. The gulch diggings in its vicinity yield largely in gold, but the scarcity of water interferes greatly with their proper success. In the bed of Rock Creek, below the village, as high as \$100 in gold per day, for each good hand, has been obtained. Upon the north fork of Smith's Gulch, not far from the village, new placer diggings were found this season, which they named Promise Gulch. I found thirty or forty miners at work in them, and they averaged an ounce a day (\$18) to each man, with only the water of a small spring, which they used over time and again. Water has since been brought by race several miles, and they now predict that they will obtain \$75,000 next season from this gulch.

Wolf Tone lode is situated a short distance above the town, the vein crossing under Rock Creek Branch. It was discovered by the gulch miners working in this creek for placer gold down to the bed rock, and who there found the vein, which is 2 feet wide, the quartz yielding \$40 per ton. Messrs. John Folger, Hughes, and Brennan own 1,500 feet on the vein, which crosses the creek, and is expected to become a valuable mine.

The Buckeye State mine is situated on the ridge northwest of the village, one-half to three-quarters of a mile distant, and is owned by Dr. F. H. Harrison, Edward Lawn, John McCollum, James Forrest, John McTurk, and others, to the extent of 3,000 feet on the lode. It is a good paying mine, and worked with skill and economy, but not to the extent it might be with a larger mill accommodation. Most of the owners work in it themselves, and twenty to twenty-five men were employed at \$4 each per day at the time of my visit to it. The main ore pump-shaft is 140 feet deep, and vertical, but cuts the lode at 80 feet in depth. There are only 90 feet of drifts on the lode, 50 feet west and 40 feet east. The width of vein is  $2\frac{1}{2}$  to 7 feet, averaging about 4 feet; the strike of the lode north 40° east, dip 60° northwest. They have an engine of 20-horse power, and 10-stamp mill. The quartz yields \$30 per ton. The product, as now worked, is from \$50,000 to \$60,000 per annum.

The Soles and Perkins lode, owned by Messrs. Perkins, Meniffee, Ralston, Taylor, and Logan, has the reputation of being a very good mine, but work is now suspended until an engine and pump can be procured. The shaft is 95 feet, on dip of vein; strike of vein east; vein 3 to 4 feet wide. It requires capital to furnish engine for mine and stamp-mill.

The Oriental lode is on the south side of Rock Creek, nearly a mile west of Atlantic City, and owned by Major Horace Holt and Messrs. George B. Thompson, L. Steele,

and Peter Haas to the extent of 1,000 feet on vein. The shaft is only 65 feet deep, in which I found the quartz, as well as the selvage matter of the vein, quite rich in free gold. These men work the mine wholly themselves, and they have run in at the base of the hill a fine adit level, 400 feet, toward the vein, which they will intersect at a considerable depth below the shaft. This will doubtless make a valuable mine when fully opened, and the owners deserve great praise for the industry and perseverance they have already shown in developing it. Eleven tons of their quartz, lately crushed, yielded \$22 per ton. They found other veins 3 to 4 feet wide along their tunnel, with similar pyritous gangue rock to that found in the Cariso, which is an excellent indication for the increase of the gold product. They also own a share with Messrs. Jones & Walker in the next 1,000 feet on the southwest extension.

The Cariboo lode is situated on Rock Creek, above the Oriental, and is owned by Bliss & Co., of California, to the extent of 1,500 feet on the west end, and Cutler & Co., 1,100 feet on east end. The ledge is 3 feet wide, shaft 75 feet deep; rock yields \$15 to \$20 per ton. They have a 10-stamp water-mill, but are not working this season. The dip of the vein is  $60^{\circ}$ , and 50 tons of the ore are reported to have yielded \$5,000.

The Eldorado mine, formerly owned by Dr. Barr, and now by Mr. Amoritty, of Atlantic, is reported to be a valuable lode; the vein is only 1 or 2 feet wide, but the ore quite rich. The shaft is 120 feet deep. This mine is not worked this season.

The Miner's Delight lode, (West End,) the richest, perhaps, of all the lodes in this mining district, is situated within the Shoshone reservation, near Hamilton Village, four miles northeast of Atlantic, in Spring Gulch, on the north side of the dividing ridge between the Sweetwater and the valley of the Big Horn. The West End, 800 feet, is owned by Messrs. Lightburn, Holbrook, and others. There is a new 60-horse power engine upon it, sufficient to pump and hoist, and another of 20 horse-power to run a 10-stamp mill which adjoins the engine-house. There are three shafts. The engine shaft, with three apartments, is vertical, and 150 feet deep. The next is 115 feet, and inclines with the dip of the lode, about  $60^{\circ}$  to  $70^{\circ}$  southeast. The third shaft (whim shaft) is 85 feet deep. The strike of the gneissic strata is north  $40^{\circ}$  east. Several drifts have been run on the vein, which averages  $3\frac{1}{2}$  feet wide, and carries excellent ore from wall to wall. About 14 inches of it consists of white, transparent quartz, of fine grain, (sometimes of milky and leaden hue,) showing free gold most of the time. The remainder of the lode consists of a selvage of decomposed quartz, next to the wall rock, of dark, rusty color, and very rich in gold. The width of the ore streak in the southwest part of the vein varies from 6 inches to 5 feet. The ore, I learn, yields about \$40 to the ton on an average.

The Miner's Delight, (East End,) is owned by parties in Tiffin, Ohio, to the extent of 800 feet. I found Mr. Robert H. Morrison, the manager, putting the shafts and levels in true mining order, timbering the shafts and drifts in the best and most approved manner, which, on such a lode, is always the best economy. The whim shaft is 85 feet deep, and two levels (of 30 and 40 feet) are run each way from the shaft, showing same quality of ore and width of vein as the West End lode. The walls of the lode are very smooth and well defined, as first-class *true veins* usually are. The lode bends north at its eastern end, an unusual circumstance.

The Hartley lode, owned by the Messrs. Hartley to the extent of 800 feet, is probably on the same vein as the Miner's Delight, which it adjoins on the southwest. The shaft is 100 feet deep, the vein  $1\frac{1}{2}$  foot wide, and drifted 100 feet, and the quartz rock is very rich. But the mine is flooded with water when the Miner's Delight pump does not keep it down, as had been the case the past summer, while the new engine of the Miner's Delight was being set up.

The Peabody lode is southwest of the Hartley, and on the same vein; and is owned by Manheim, Quinn, Frank, Young, Smith, and others, to the extent of 3,000 feet. One inclined shaft is 120 feet deep, the lode or dip being about  $45^{\circ}$ , and the vein 3 to 4 feet wide. The ore is not as rich as the Hartley, but fair; yields \$15 per ton. It is on the hill, and will probably improve much at the same level as the three mines northeast of it on same lode.

*Stamp-mills.*—Twelve stamp-mills have been erected, I am informed, in this district, carrying about 160 stamps, which was double the number required for the small working force and production of the mines. One or two valuable ones were burned, and two were erected on worthless, huge quartz veins, by dupes of skillful swindlers; and one of these is now being taken to the Utah mines.

*Gulch-mining.*—Gold has been found in nearly every gulch in this district, and some have proved almost as rich as the famous Dutch Flat diggings in California, though of far less extent, the ravines being narrow. But their large yield is the best evidence of the number of rich lodes in this district; for placer gold is the product of the veins above them, whose surfaces have been worn down by time and the gold carried with the debris to the gulches and valleys below.

There are six or seven of these rich gulches, which are worked only a small portion of the year, for want of sufficient water: to wit, the Cariso, and Rock Creek, above and below Atlantic, and the Yankee, Meadow, Smith's Promise, and Spring gulches.



The Spring gulch is just below Miner's Delight, and is the debris of that rich lode. I found thirty to forty men working on it, with only the water pumped from the Miner's Delight engine shaft. The largest nugget taken from it weighed six ounces. I saw many of an ounce or two in weight, and also saw a lump of gold quartz, taken from the gravel, as large as a water bucket, which looked as if it contained a pound or two of gold.

Promise Gulch was discovered this summer, and is a branch of Smith's. It heads up north against the southwest extension of the Miner's Delight lode, on the dividing ridge. It is on the road between Miner's Delight and Atlantic, and I have already made mention of it.

*Amount of bullion extracted.*—I found it impossible to obtain anything like correct statistics on this point. During the year ending July 1, 1869, the estimate was \$155,000 in coin. The product has probably been that much for each of the last two years, and perhaps considerably more, as that is about what is taken from only three of the best mines. This looks like a small amount for so many lodes that yield so well; but it must be borne in mind that it is very little over a year since Indians murdered some of the best young men and miners, within the very center of this eight miles of mines, and killed several other citizens in the valley, not far north of the mines. Miners cannot work and at the same time watch and fight Indians.

This state of affairs has prevented immigration to those mines, and large numbers have been induced to leave and go to the Utah mines within the last eighteen months, where the prospector can pursue his arduous calling, free from the constant apprehension that while he is stooping over his work the arrow of an ambushed savage may pierce his heart.

I fully concur with Raymond, where, in speaking of this mining district, he says: "It speaks well for the value of the mineral resources of this district that a small number of poor miners should have brought this gold to light in an unexplored desert, remote from the civilized world, and practically inaccessible. The results show their nerve, and persevering industry and energy, unassisted by capital, while suffering from want of supplies, and facing the most terrible Indian atrocities, in the achievement of personal gain and the reclamation of so remote a mining country to the purposes of public wealth and general civilization."

*Fuel for mining purposes.*—The question of fuel will become a serious one at no distant period, when capital and experienced labor shall be brought to the energetic development of these mines. Most of the timber for the mines, and lumber for buildings, can be obtained twenty to thirty miles west, in the Wind River Mountains, where there are saw-mills at this time; but fuel for the engines and furnaces, and for domestic purposes, cannot be brought so far except at too great expense.

Coal must therefore be found, and it is possible, and even probable, from what I can hear, that it may be found not far north of the mines—in the "valley," as it is termed. We hope to be able next season to make personal examination as to whether coal exists there.

If it cannot be found, then the next step necessary will be to enlist capital for the purpose of securing the construction of a *narrow-gauge railroad* from Fort Steele, or Rawlins, via Seminole Gap, and thence up the Sweetwater to the gold mines. This would supply coal from the coal-fields at Carbon, or north of Fort Steele, or from valuable veins that exist not far south of Rawlins. It would also give access to the gold and silver mines of the Seminole Mountains, close to this line of road, which in a short time will exhibit sufficient wealth in mineral products, and so attract public attention and confidence as to command the building of a railroad thus far toward the Sweetwater mines. The whole line would require but very little more grading than for a railroad over an Illinois prairie.

*Grain and vegetables for the mines.*—Nothing but a few garden vegetables can be raised at these mines, for the reason that the altitude is 8,000 feet. But north, in the valley of the Popo-agie, not far from the Shoshone agency, everything needed can be raised, the descent north being rapid, the soil good, and the surrounding mountains affording grateful shelter. I never saw finer wheat than was grown in that valley this summer. One party raised 2,500 bushels. I also saw oats, grown there, of equal quality to the wheat, and there is no question but that these mines could be fully supplied from that valley with all agricultural products that would be required. But that valley is in the Shoshone reservation, and Indians generally do not like to be crowded upon. Washakie, however, the chief of this tribe, is an intelligent, shrewd, and good-natured Indian, and I learn that his good sense teaches him that his tribe do not need and cannot use one-half the reservation that Congress has given them there; and inasmuch as the Sioux, Cheyennes, and Arapahoes, are his natural enemies, and constantly watch to give him battle, he is willing to have a body of white settlers on part of the reservation, to help him fight his enemies when they attack him. He and his chief men are, therefore, willing to give up the Popo-agie Valley, next to the mines, to the settlement of whites, and retain only the Wind River Valley as sufficient for them. It is, therefore, hoped that the Department will examine



into this question and do what it can toward fostering the interests of the new gold region of Sweetwater.

## ELK MOUNTAIN.

On my return trip from Sweetwater I was enabled, through the courtesy of General Morrow, at Fort Steele, to visit and examine Elk Mountain, which is situated a little south of east from Fort Steele, about thirty miles distant, and from eight to ten miles south of the railroad at Percy station.

Captain Bonney and Surgeon Wilson of the post accompanied me. We camped at the northern base of the mountain, two miles southwest of old Fort Halleek. Next day, September 4, I began the ascent of the mountain from the north end, on horseback, and with considerable difficulty traced its crest to the highest summit, over 10,000 feet in altitude.

It is almost an isolated mountain, but in reality is the northern extension of the Medicine Bow range, and is quite similar in geological characteristics. Its chief axis of upheaval is along its western base, its 3,000 feet of eastern face being almost vertical, and broken off in part of its length from its adjoining formations below, while its western side slopes west at an angle of about 45°, and is covered nearly to its north and south crest with the silurian sand and lime rocks. Over half way up this western slope these last are overlaid with the lower triassic sandstone. Its crest and eastern face are bare of unchanged rocks, except around its northeastern curve, where the silurian lime and sandstones are found lying up against it almost vertical, and unconcealed by any newer strata.

The metamorphic and azoic nucleus of the mountain, southward to its highest crest, is almost exactly similar to that portion of the Laramie range south from Laramie Peak to Collins's Cañon, before described. There is the same folding and strike of strata, and the same alternation of dike-like vertical beds of black and gray gneiss and red granite—the feldspar predominating over the mica and quartz. The exposed edges of these folded rocks on the eastern face of the mountain afford a fine display of anticlinals and synclinals, the same as seen in the western Seminole Mountain, where such rich silver veins have been discovered since I visited it in July last, and also seen on the eastern face of Reed's Peak, (the twin of Laramie Peak,) before described, where it is likewise confidently expected that silver and gold will be found as soon as fairly prospected. The geological characteristics and general aspect of the eastern face of Elk Mountain also resemble, as I am informed, the formations at Georgetown, Colorado. Dr. Hayden, in his report on Colorado, says: "The gold and silver lodes of this Territory, so far as they are observed, are entirely composed of the gneissic and granite rocks. At any rate, all the rocks about Central City are most distinctly gneissic, while those containing silver at Georgetown are both gneissic and granitic. The mountain in which the Baker, Brown, Corin, Terrible, and some other rich lodes are located, is composed mostly of gneissic and reddish feldspathic granite, while the Leavenworth and McClellan Mountains, equally rich in silver, are composed of banded gneiss, with the lines of bedding or stratification very distinct." He adds, "There is also a wonderful parallelism of the lodes of Colorado, the most of them taking one general direction or strike northeast and southwest."

I found these peculiarities about the same at the Sweetwater gold mines, (some of which, I have no doubt, will change to silver mines at greater depths,) and also in the Seminole mines, as far as manifested in the slight operations which had been performed there. And the same will appear in the region of Laramie Peak, and at the Elk and Medicine Bow Mountains, when tested. The strike of the outcropping edges of these folded azoic rocks is, in all the localities above named, nearly northeast and southwest, as in Colorado.

Some "colors" of gold have been panned from the beds of the eastern spring branches of Elk Mountain, and doubtless a proper search will disclose gold in good quantities there; though the geological character and arrangement of the rocks seems to indicate that silver will most predominate, judging from comparison with similar formations where rich silver lodes have been found.

Elk Mountain appears to have been, like Laramie Peak, the focus of deep-seated, radiating lines of upheaval, but which did not, as there, force the azoic rocks to the surface beyond its present base, but near enough to fracture and fold and turn up at different angles of dip the unchanged stratified rocks.

Looking to the northeast, toward Laramie Peak, you can see a plainly-marked anticlinal groove trending off in that direction, and formed by the fracture and uplift of the strata dipping either way. This has much distorted the coal strata south of the Carbon coal-mines, so as to very materially lessen the value of that locality.

Another line is found reaching northward, creating the divide between Carbon and Percy, and thus detaching the coal-field of the Rock Creek and Medicine Bow River Valleys from that portion which I believe will be found of considerable value, in a northwesterly direction between Carbon and the Platte River.

Another radiating line of upheaval trends west, or a little south of west, tilting up

all that vast exposure or thickness of cretaceous strata, through the monoclinal valleys of which the railroad runs from Percy to Fort Steele, twenty-seven miles.

I refer to these facts to show why Elk Mountain, uplifted to an altitude of 10,000 feet, should have a right to claim equality, in a mineral point of view, with Colorado mountains of same altitude and geological character, and that its similarity and other relations to its neighbor mountains (though not close neighbors) should entitle it to consideration as a connecting link between distant mountain chains, and as aiding in the explanation of surrounding mineral centers, the strike of mineral veins, and the direction of the igneous forces that wrought such harmony in all their characteristics.

I contemplated the examination of the Medicine Bow Mountain, south of Elk Mountain, this fall, but could not. Gold has been mined the last two seasons in the southern end of that mountain, from the gulch at the head of Douglass Creek, and also in the head gulches of Rock Creek. I have great confidence that this mountain will yet be found to yield largely of the precious metals, and from its accessibility to the railroad it will, in that event, form an attractive mining center, and add largely to the resources and wealth of Wyoming.

I returned to Fort Steele on the evening of the 4th of September, and on the 5th returned to Cheyenne, after arranging to examine the Medicine Bow Mountain at an early day, in company with General Morrow; but, on receiving your telegram of September 6, requesting me to proceed to California on business for the Department, I abandoned all further expeditions to the mountains this season.

#### WYOMING RAILROADS.

The Union Pacific Railroad has four hundred and eighty-five miles of track within the Territory of Wyoming. During the past year the road has fully sustained its well-earned reputation, for the courtesy, and careful attention to business and to the comfort and safety of passengers, shown by its large corps of officials of every grade. No accident worthy of notice has occurred upon its one thousand and thirty-two miles of line this year, and during that time its freights and travel seem to have almost doubled, judging only from appearances, as compared with those of last year. This is partly owing to the absence of an Indian panic—the Indians of Wyoming having been quiet this year—and partly to the natural increase of China trade, and the great increase of silver ores and bullion produced in Utah and Nevada within the past eight or ten months.

The amount of foreign goods moving from San Francisco eastward, this season, has very largely increased. We have noticed trains of 30 cars, all laden with the products of California and the East Indies, such as wool, tea, Java coffee, &c., &c. I am informed by one of the division superintendents that there were as many as 200 car loads of teas upon the Union Pacific Railroad at one time, moving eastward, part for the American market, and a large portion for European ports; for it has been proven that teas from China can be laid down in Liverpool over this continental road about thirty days earlier than they can by the Red Sea and Suez Canal route. Within a very few years these continental roads will be among the best-paying lines in the country.

The earnings of the Union Pacific Railroad for the month of September, 1871, are reported to be \$800,401 94; expenses for the same time, \$298,022 24; profits for this month, \$502,379 70. This is the largest amount of earnings, I learn, of any month since the completion of the road. Its net earnings this year will probably exceed those of last year \$1,000,000, at the very least.

The contemplated Cheyenne and Montana Railroad is now a subject of deep interest with the people of these two mountain Territories. There is an almost universal sentiment in favor of this route, and of immediately petitioning Congress to grant the same right of way and other privileges in aid of it that have been so liberally granted to more favored communities throughout the great and fertile valley of the Mississippi.

A bill for this purpose was introduced into Congress last winter by the delegate from Montana, but, not being able to call it up in that short session, it was again introduced into the present Congress, on the 13th of March last, by the delegate from Wyoming, Hon. W. T. Jones.

The route of the road, as proposed, is from Cheyenne to the great Iron Mountain, on the head branches of the Chugwater, thence along the eastern base of the Laramie Mountains to Fort Fetterman, on the North Platte, thence along the eastern base of Big Horn Mountains, *via* old Forts Reno and Phil. Kearney, to the Yellowstone, and thence to Helena, Montana, along the valleys of the Yellowstone and Gallatin Rivers, unless the Northern Pacific Railroad should reach far enough south to occupy the same line, in which event to form a junction with that road near the mouth of the Big Horn River.

This line furnishes the natural outlet, not only for the trade of Montana, but that other great trade within the limits of Wyoming, which would rapidly flow from the Iron Mountain, the gold and silver ores from the Laramie Peak region, the large forests of timber between Laramie Peak and Fort Fetterman, the coal deposits near Fetter-



man and all along the base of the Big Horn Mountains, the best agricultural portion of Wyoming within the head valleys of the Cheyenne, Powder, and Tongue Rivers, and for the gold and silver products which we know would pour in from the Big Horn Mountains.

The freights now paid by Montana to and from Corinne, Utah, and up the Missonri River, would soon build and pay for a three-foot gauge railroad from Cheyenne to the mouth of the Big Horn, and this route between here and the interior of Montana would be on almost a direct northwest and southeast line, and hence, far the most favorable direction for the travel and freights of that Territory on their way to and from the more central cities of the valley of the Mississippi. That Territory will continue to insist upon a railroad outlet in this direction, instead of going round by Corinne, or Fort Union, in Dakota, to reach their St. Louis and Chicago marts of trade.

The Yellowstone Lake and Falls are also close to this contemplated railroad route from Cheyenne to Helena, and are not accessible to the tourist from any other direction than *up* the Yellowstone, in a southerly course, to the lake and geysers in Wyoming.

The wonderful geysers, the strange scenery of Yellowstone Lake, and the great perpendicular falls, one being 350 feet high, with numerous wild cataracts of the Yellowstone River, are all objects of the deepest interest and attraction to tourists from all lands, and are destined to become even more popular with them than the valley and falls of Yosemite.

Yellowstone Lake is in the highest altitude, perhaps, of any mountain lake of its size in the world, its surface being 8,337 feet above sea level, and about 2,000 feet higher than the beautiful Lake Tahoe in the Nevada Mountains. It lies in Wyoming, and within a broad cove or valley between two long spurs of the Wind River Mountain, extending north from the crest of the continental divide, and open northward for the passage of the river. The water of the lake is said to be so warm as not to freeze in winter, though the lake is filled with the largest and finest of trout, showing that the hot sulphur springs on its borders do not render the water too warm or too sulphurous to permit the production of fish.

The enormous geysers within its valley can be counted by hundreds, some of them throwing up columns of water 5 feet in diameter and 140 feet in vertical height; many of 60, 90, and 125 feet in height; and N. P. Langford mentions one that presented a water column 219 feet high.

The lake is described by Mr. Langford, who was one of the large party that accompanied Surveyor General Washburne, of Montana, last year, in exploring that locality, as being twenty-five miles long and seventy-five to eighty miles in circumference. After giving a full description of these remarkable geysers, (in the June number of Scribner's Monthly,) he closes by saying:

"They are but a reproduction, upon a much grander scale, of the (geyser) phenomena of Iceland. A wider field for the investigation of the chemist than that presented by the geysers may be found in the many tinted springs of boiling mud, and the mud volcano. These were objects of the greatest interest to Humboldt, who devotes to a description of them one of the most fascinating chapters of *Cosmos*. It would be rash for us to speculate where that great man hesitated. We can only say that the field is open for exploration, illimitable in resource, grand in extent, wonderful in variety, in a climate *favoured of Heaven*, and amid scenery the most stupendous on the continent."

Such scenery will attract visitors in large numbers annually, from all parts of our continent and the entire civilized world, who would most naturally seek a direct railroad line from Cheyenne to the Yellowstone Lake, up the valley of that river, and furnish one of the largest items of business and travel the road would have at first.

We therefore hope that Congress will admit and act upon the claim of Wyoming and Montana in the most liberal and impartial spirit, and thus encourage speedy access to the rich resources above enumerated, and to the grandest and most novel scenery on the continent.

I am, sir, very respectfully, your obedient servant,

SILAS REED,

*Surveyor General of Wyoming.*

Hon. WILLIS DRUMMOND,  
*Commissioner General Land Office, Washington, D. C.*

19 L O



A.—Statement of surveys contracted for under the appropriation of \$25,000 made by act of Congress approved March 3, 1869.

Number of contract.	Date.	Name of deputy.	Work embraced in contract.	Remarks.
1	1870. June 13	Edwin James .....	The 8th guide meridian, between the 3d and 4th and 4th and 5th standard parallels; and the 4th and 5th standard parallels, between the 8th and 9th guide meridians; and between the 8th guide meridian and the west boundary of Nebraska. The exterior lines of townships 13, 14, 15, and 16 north, in ranges 65, 66, and 67 west.	Work completed and paid for, amounting to \$1,515 26.
2	June 21	Samuel H. Winsor and Nathan P. Cook.	The 3d standard parallel through ranges 70, 71, and 72, and thence 48 miles west to the 10th guide meridian; the 4th standard parallel, between the 9th and 10th guide meridians; the 9th guide meridian, between the 3d and 4th and 4th and 5th standard parallels. The exterior lines of townships 13, 14, 15, and 16 north, in ranges 73, 74, and 75 west; and townships 17 north, in ranges 73, 74, 75, and 76 west.	A portion of the work under this contract has been paid for, amounting to \$2,863 37. Careless surveying, and the consequent necessity of examinations and re-surveys, have delayed the settlement of the remainder of the work.

NOTE.—The most of the above appropriation reverted to the Treasury under the act of Congress of July 12, 1870.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Cheyenne, Wyoming, June 30, 1871.

SILAS REED,  
Surveyor General of Wyoming.

B.—Statement of surveys contracted for under the appropriation of \$40,000 made by act of Congress approved July 15, 1870.

Number of contract.	Date.	Name of deputy.	Work embraced in contract.	Remarks.
3	1870. July 16	Henry G. Hay and John B. Thomas.	The subdivision lines of townships 13 and 14 north, in ranges 65, 66, and 67 west; and of townships 15 north, in ranges 66 and 67 west, closing on the out boundaries of the town site of Cheyenne and the fort D. A. Russell military reservation.	Work completed and paid for, amounting to \$4,657 91.
5	Aug. 27	Stephen W. Downey..	The subdivision lines of townships 13 and 14 north, in ranges 73, 74, and 75 west; and of townships 15 and 16 north, in range 75 west. Townships 14 north, ranges 73 and 74 west, are made fractional by the Fort Sanders military reservation.	Work completed and paid for, amounting to \$4,638 17.
6	Aug. 30	Nathan P. Cook .....	The 4th standard parallel north, from the initial point for the 10th guide meridian to the western boundary of the territory, to wit: the 34th meridian.	Work completed and paid for, amounting to \$3,600. This line was stopped at the initial point for the 15th guide meridian.
7	Aug. 31	Edwin James and Alfred M. Rogers.	The subdivision lines in townships 17 north, in ranges 73, 74, 75, and 76 west, and in fractional township 16 north, range 74 west. The exterior lines of townships 17, 18, 19, and 20 north, in ranges 69, 70, 71, and 72 west.	Subdivisions completed and paid for, amounting to \$2,954 85. Extérieurs completed and field-notes returned to office.
9	Oct. 17	John B. Thomas .....	The exterior lines of townships 13, 14, 15, and 16 north, in ranges 68 and 69 west; and of townships 13, 14, 15, and 16 north, in ranges 63 and 64 west. The subdivision lines in township 15 north, range 65 west, and in townships 16 north, in ranges 65, 66, and 67 west.	A portion of extérieurs completed and paid for, amounting to \$793 00. The remainder of surveys completed and field-notes returned to office.
10	Oct. 17	Henry G. Hay .....	The subdivision lines in townships 13, 14, 15, and 16 north, in ranges 68 and 69 west.	Four townships completed and paid for, amounting to \$2,399 22. The survey of the remaining four completed, and field-notes returned to office.
11	Nov. 28	Stephen W. Downey and Wm. O. Downey.	The subdivision lines in fractional township 15 north, range 74 west; and in fractional township 16 north, range 73 west.	Work completed and paid for, amounting to \$742 58.
13	1871. May 16	William J. Allason ...	The exterior lines of townships 13, 14, 15, and 16 north, in ranges 76 and 77 west; and of townships 18 north, in ranges 73, 74, 75, and 76 west. The subdivision lines in townships 18 and 19 north, in range 71 west.	Surveys in progress.
14	May 20	Wm. O. Downey and Stephen W. Downey.	The subdivision lines in townships 18 north, in ranges 73, 74, and 75 west; and townships 16 north, in ranges 76 and 77 west.	Surveys in progress.
15	May 20	Edwin James and Alfred M. Rogers.	The exterior lines of townships 13, 14, 15, and 16 north, in ranges 61 and 62 west; and of fractional townships 13, 14, 15, and 16 north, in range 60 west, closing to the east on the west boundary of Nebraska. The subdivision lines in townships 13, 14, 15, and 16 north, in ranges 63 and 64 west.	Surveys in progress.
16	June 10	J. Wesley Hammond .	The subdivision lines in fractional township 14 north, in range 60 west.	Survey in progress.

SILAS REED,  
*Surveyor General of Wyoming.*

## D.—Statement of surveys contracted for under special appropriations of Congress.

Number of contract.	Date.	Name of deputy.	Work embraced in contract.	Remarks.
17	1871. June 15	N. J. Paul and J. N. J. Paul.	The exterior lines of the reservation made by the second article of the treaty concluded the 3d day of July, 1868, with the Shoshones and Bannacks, for the use of the Shoshone Indians; commencing at the mouth of Owl Creek, and running due south to the crest of the divide between the Sweetwater and Papo-agie Rivers; thence along the crest of said divide and the summit of Wind River Mountains to the longitude of North Fork of Wind River; thence due north to mouth of said North Fork, and up its channel to a point twenty miles above its mouth; thence in a straight line to headwaters of Owl Creek, and along middle of channel of Owl Creek to place of beginning.	This contract is made under the appropriation of \$3,600 made by act of Congress approved July 15, 1870, for surveying the external lines of said reservation. The contract has not yet been acted on by the Commissioner of the General Land Office.

SILAS REED,  
*Surveyor General of Wyoming.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
*Cheyenne, Wyoming, June 30, 1871.*

## E.—Statement of surveys contracted for to be made for account of individual depositors within the fiscal year ending June 30, 1871.

Number of contract.	Date.	Name of deputy.	Work embraced in contract.	Remarks.
4	1870. July 18	Henry G. Hay and John B. Thomas.	The out-boundaries of the town-site of Cheyenne; beginning at the southwest corner, as established by the town trustees, and running thence north 26° 30', west 114.85 chains; thence north 63° 30', east 135.46 chains; thence south 26° 30', east 114.85 chains; thence south 63° 30', west 135.46 chains to point of beginning.	Deposit made by town trustees of \$100. Survey completed and paid for, amounting to \$92; the balance of deposit to apply to office work.
12	Dec. 9	Maurice J. Roche.....	The out-boundaries of the town-site of Merrill; beginning at a point 20 chains south of the northeast corner of the Fort Bridger Military Reservation, and running thence east 40 chains; thence south 80 chains; thence west 40 chains.	Deposit of \$24 for survey and \$40 for office work. Action on this contract suspended by Commissioner.

SILAS REED,  
*Surveyor General of Wyoming.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
*Cheyenne, Wyoming.*



F.—Statement of townships surveyed in Wyoming Territory to June 30, 1871, of which the field-notes have been returned, examined, and approved.

Township.	Range.	Area.	Remarks.
13 north .....	65 west .....	23, 000. 34	Made fractional by town-site of Cheyenne.
13 north .....	66 west .....	22, 724. 96	
13 north .....	67 west .....	22, 894. 29	
13 north .....	68 west .....	23, 043. 44	Contains a lake of about 300 acres in area.
13 north .....	69 west .....	23, 066. 60	
13 north .....	73 west .....	23, 053. 61	
13 north .....	74 west .....	22, 938. 00	Fractional by town-site of Cheyenne.
13 north .....	75 west .....	22, 793. 58	
14 north .....	65 west .....	23, 042. 14	
14 north .....	66 west .....	21, 498. 76	Fractional by Fort D. A. Russell reservation.
14 north .....	67 west .....	18, 642. 35	
14 north .....	68 west .....	23, 018. 42	
14 north .....	69 west .....	23, 036. 99	Fractional by Fort Sanders reservation.
14 north .....	73 west .....	17, 018. 08	
14 north .....	74 west .....	19, 030. 67	
14 north .....	75 west .....	22, 999. 75	Fractional by Fort Sanders reservation, and contains two lakes of about 500 acres total area.
15 north .....	65 west .....	22, 874. 34	
15 north .....	66 west .....	23, 134. 99	
15 north .....	67 west .....	23, 148. 13	Fractional by Fort Sanders reservation.
15 north .....	68 west .....	22, 971. 02	
15 north .....	69 west .....	22, 995. 92	
15 north .....	74 west .....	10, 231. 70	Fractional by Fort Sanders reservation.
15 north .....	75 west .....	22, 829. 59	
16 north .....	65 west .....	22, 952. 52	
16 north .....	66 west .....	23, 136. 81	Fractional by Fort Sanders reservation.
16 north .....	67 west .....	23, 182. 95	
16 north .....	68 west .....	23, 225. 60	
16 north .....	69 west .....	23, 267. 23	Fractional by Fort Sanders reservation.
16 north .....	73 west .....	18, 147. 48	
16 north .....	74 west .....	20, 374. 97	
16 north .....	75 west .....	23, 228. 75	Fractional by Fort Sanders reservation.
17 north .....	73 west .....	23, 123. 70	
17 north .....	74 west .....	23, 085. 53	
17 north .....	75 west .....	23, 116. 55	Contains a lake of about 1,200 acres in area.
17 north .....	76 west .....	21, 785. 28	
Total .....	.....	768, 615. 09	

SILAS REED,  
Surveyor General of Wyoming.

SURVEYOR GENERAL'S OFFICE,  
Cheyenne, Wyoming, June 30, 1871.

G.—Statement of the amount expended for compensation of the surveyor general of Wyoming Territory during the fiscal year ending June 30, 1871.

Name.	Quarter.	Amount of service.	Amount paid.
Silas Reed .....	First quarter .....	During entire quarter .....	\$750
Silas Reed .....	Second quarter .....	.....do .....	750
Silas Reed .....	Third quarter .....	.....do .....	750
Silas Reed .....	Fourth quarter .....	.....do .....	750
Total amount paid .....	.....	.....	3, 000
Amount of appropriation made by act of Congress approved July 12, 1870, for compensation of surveyor general .....	.....	.....	\$3, 000

SILAS REED,  
Surveyor General of Wyoming.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Cheyenne, Wyoming, June 30, 1871.

H.—Statement of the amount expended for compensation of clerks in the office of the surveyor general of Wyoming Territory during the fiscal year ending June 30, 1871.

Name.	Position.	Quarter.	Amount of service.	Amount.	Amount expended during quarter.
Alfred M. Rogers. . .	Chief clerk. . .	First quarter . .	July 1 to Aug. 3, 1870 . .	\$166 30	
Charles J. Reed . . .	do . . . . .	do . . . . .	Aug. 4 to Sept. 30, 1870 . .	233 70	
Leverett C. Stevens .	Clerk . . . . .	do . . . . .	Sept. 27 to Sept. 30, 1870 .	13 04	
George T. Adams . . .	Copyist . . . . .	do . . . . .	Sundry copying . . . . .	20 00	
					\$483 04
Charles J. Reed . . . .	Chief clerk. . .	Second quarter .	During entire quarter . .	450 00	
Richard Blackstone .	Draughtsman .	do . . . . .	Nov. 9 to Dec. 31, 1870 . .	216 03	
George H. Adams . . .	do . . . . .	do . . . . .	Nov. 7 to Dec. 22, 1870 . .	187 50	
Leverett C. Stevens .	Clerk . . . . .	do . . . . .	During entire quarter . .	300 00	
					1,153 53
Charles J. Reed . . . .	Chief clerk . .	Third quarter . .	do . . . . .	450 00	
Richard Blackstone .	Draughtsman .	do . . . . .	do . . . . .	375 00	
Leverett C. Stevens .	Clerk . . . . .	do . . . . .	do . . . . .	300 00	
					1,125 00
Charles J. Reed . . . .	Chief clerk . .	Fourth quarter .	do . . . . .	450 00	
Richard Blackstone .	Draughtsman .	do . . . . .	do . . . . .	375 00	
Leverett C. Stevens .	Clerk . . . . .	do . . . . .	do . . . . .	350 00	
					1,175 00
Total amount expended . . . . .					3,936 57
Amount of appropriation made by act of Congress approved July 12, 1870, for compensation of clerks . . . . .					4,000 00
Amount unexpended and reverting to United States Treasury . . . . .					63 43

SILAS REED,  
Surveyor General of Wyoming.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Cheyenne, Wyoming, June 30, 1871.

I.—Statement of the amount expended for the incidental expenses of the office of the surveyor general of Wyoming Territory during the fiscal year ending June 30, 1871, and for the fractional year ending June 30, 1870.

To whom paid.	Quarter.	Item.	Amount.	Amount expended during quarter.
	1870.			
Joseph & O'Brien .....	4th quarter .....	Stationery .....	\$40 20	*\$95 37
Silas Reed .....	do .....	Miscellaneous, per vouchers .....	15 50	
E. M. Cohen .....	do .....	Rent .....	39 67	
	1871.			
Joseph & O'Brien .....	1st quarter .....	Stationery .....	33 75	299 84
A. R. Converse .....	do .....	Furniture .....	98 35	
E. M. Cohen .....	do .....	Rent .....	46 66	
P. S. Wilson .....	do .....	Rent .....	55 43	
Silas Reed .....	do .....	Miscellaneous, per vouchers .....	65 65	
Joseph & O'Brien .....	2d quarter .....	Stationery .....	53 50	229 39
P. S. Wilson .....	do .....	Rent .....	100 00	
A. R. Converse .....	do .....	Sundries .....	11 17	
E. P. Snow .....	do .....	Fuel .....	20 00	
Silas Reed .....	do .....	Miscellaneous, per vouchers .....	44 72	
Joseph & O'Brien .....	3d quarter .....	Stationery .....	51 30	269 90
P. S. Wilson .....	do .....	Rent .....	100 00	
E. P. Snow .....	do .....	Fuel .....	21 60	
Charles J. Reed .....	do .....	Miscellaneous, per vouchers .....	97 60	
Joseph & O'Brien .....	4th quarter .....	Stationery .....	29 65	425 30
P. S. Wilson .....	do .....	Rent .....	100 00	
N. A. Baker .....	do .....	Printed blanks .....	14 03	
A. R. Converse .....	do .....	Furniture, &c .....	200 00	
Silas Reed .....	do .....	Miscellaneous, per vouchers .....	81 65	
Total amount expended .....				1,319 80
Amount of appropriation made by act of Congress approved July 15, 1870, for incidental expenses, office rent, &c .....				2,000 00
Amount unexpended and reverting to United States Treasury .....				680 20

\* By reason of no appropriation being made for the incidental expenses of the fractional fiscal year ending June 30, 1870, the expenses for that period were made payable out of the appropriation for the fiscal year ending June 30, 1871.

SILAS REED,  
Surveyor General of Wyoming.

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
Cheyenne, Wyoming, June 30, 1871.



K.—*Estimate of appropriations required for the surveying service in the Territory of Wyoming for the fiscal year ending June 30, 1873.*

For extending the standard and meridian lines, and for surveying township and subdivision lines of agricultural, grazing, and coal lands within the land-grant of the Union Pacific Railroad Company .....	\$50,000 00
For salary of the surveyor general.....	3,000 00
For salaries of clerks .....	6,000 00
For rent, fuel, stationery, messenger, and incidental expenses.....	2,500 00
Total .....	<u>61,500 00</u>

SILAS REED,  
*Surveyor General of Wyoming.*

UNITED STATES SURVEYOR GENERAL'S OFFICE,  
*Cheyenne, Wyoming, August 23, 1871.*

No. 1.—*Tabular statement showing the number of acres of public lands surveyed in the following land States and Territories up to June 30, 1870, during the last fiscal year, and the total of the public lands surveyed up to June 30, 1871; also the total area of the public domain remaining unsurveyed within the same.*

Land States and Territories.	Areas of public land in States and Territories.		Number of acres of public lands surveyed up to June 30, 1870.	Number of acres of public lands surveyed prior to June 30, 1870, not heretofore reported.	Number of acres of public lands surveyed within the fiscal year ending June 30, 1871.	Total of the public lands surveyed up to June 30, 1871.	Total area of public lands remaining unsurveyed, and of course uncultured and undisposed of inclusive of the area of private land claims surveyed, up to June 30, 1871.
	In acres.	In square miles.					
Wisconsin.....	34, 511, 360	53, 924	34, 511, 360	.....	.....	34, 511, 360	.....
Iowa.....	35, 228, 800	55, 045	35, 228, 800	.....	.....	35, 228, 800	.....
Minnesota.....	53, 459, 840	83, 531	26, 019, 739	97, 879. 55	3, 209, 686. 03	29, 327, 305	24, 132, 535
Kansas.....	52, 043, 520	81, 318	29, 169, 663	.....	7, 003, 410. 75	36, 173, 074	15, 870, 446
Nebraska.....	48, 636, 800	75, 995	19, 349, 597	.....	2, 231, 632. 72	21, 571, 130	27, 065, 670
California.....	120, 047, 840	188, 981	32, 338, 378	743, 408. 12	818, 845. 96	33, 900, 632	87, 047, 208
Nevada.....	71, 757, 741	112, 000	3, 821, 890	.....	1, 054, 556. 50	4, 876, 447	66, 861, 294
Oregon.....	60, 975, 360	95, 274	9, 463, 258	.....	677, 022. 71	10, 140, 281	50, 835, 079
Washington Ter.....	44, 796, 160	69, 994	5, 368, 259	.....	405, 459. 82	5, 773, 719	39, 022, 441
Colorado Ter.....	66, 880, 000	104, 500	7, 626, 327	.....	1, 276, 571. 93	8, 902, 899	57, 977, 101
Utah Ter.....	54, 065, 075	84, 476	3, 211, 508	.....	551, 438. 42	3, 762, 946	50, 302, 129
Arizona Ter.....	72, 906, 304	113, 916	1, 761, 783	.....	189, 559. 62	1, 951, 343	70, 954, 961
New Mexico Ter.....	77, 568, 640	121, 201	4, 240, 859	.....	161, 413. 94	4, 402, 273	73, 166, 367
Dakota Ter.....	96, 595, 840	150, 932	6, 044, 264	.....	533, 163. 49	6, 577, 427	90, 018, 413
Idaho Ter.....	55, 228, 160	86, 294	894, 511	138, 219. 30	1491, 324. 92	1, 524, 055	53, 704, 105
Montana Ter.....	92, 016, 640	143, 776	1, 585, 545	.....	873, 632. 65	2, 450, 168	89, 557, 472
Wyoming Ter.....	62, 645, 120	97, 823	.....	.....	770, 166. 81	770, 167	61, 874, 953
Missouri.....	41, 824, 000	65, 350	41, 824, 000	.....	.....	41, 824, 000	.....
Alabama.....	32, 462, 080	50, 722	32, 462, 080	.....	.....	32, 462, 080	.....
Mississippi.....	30, 179, 840	47, 156	30, 179, 840	.....	.....	30, 179, 840	.....
Louisiana.....	26, 461, 440	41, 346	23, 463, 133	.....	815. 82	23, 463, 949	2, 995, 491
Arkansas.....	33, 406, 720	52, 198	33, 406, 720	.....	.....	33, 406, 720	.....
Florida.....	37, 931, 520	59, 268	27, 103, 768	.....	427, 818. 83	27, 531, 587	10, 399, 933
Ohio.....	25, 576, 960	39, 964	25, 576, 960	.....	.....	25, 576, 960	.....
Indiana.....	21, 637, 760	33, 809	21, 637, 760	.....	.....	21, 637, 760	.....
Michigan.....	36, 128, 640	56, 451	36, 128, 640	.....	.....	36, 128, 640	.....
Illinois.....	35, 462, 400	55, 410	35, 462, 400	.....	.....	35, 462, 400	.....
Indian Ter.....	44, 154, 240	68, 991	.....	.....	1, 350, 106. 88	1, 350, 107	42, 804, 133
Alaska.....	369, 529, 600	577, 390	.....	.....	.....	.....	369, 529, 600
Total.....	1, 834, 998, 400	2, 867, 185	527, 882, 952	979, 506. 97	22, 016, 607. 80	550, 879, 069	1, 284, 119, 331

\* Of the surveys in Kansas 4,792,790 acres are Osage diminished reservation lands, authorized to be surveyed under the provision of section twelve, act of Congress approved July 15, 1870, (United States Statutes, vol. 16, p. 362.)

† Of the surveys in Idaho Territory 130,129 acres are Nez Percé Indian lands, authorized to be surveyed into twenty-acre tracts, per article three treaty of June 9, 1863, (United States Statutes, vol. 14, p. 648.)

‡ All of these lands, to wit, 1,350,106.88, are Chickasaw lands, surveyed into one hundred and sixty acre tracts, under the provision of the eleventh article of the treaty of April 28, 1866, (United States Statutes, vol. 14, p. 774.)

WILLIS DRUMMOND,  
Commissioner.

DEPARTMENT OF THE INTERIOR,  
General Land Office, 1871.

No. 2.—Statement of public lands sold, of cash and bounty-land scrip received therefor, number sixth section of said act; also, of land located with scrip under the agricultural college and thereof, and statement of incidental expenses thereon, in the first half year of the fiscal year

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25 per acre, and amount received for the same, for the first half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the first half of the fiscal year ending June 30, 1871, mentioned in the first column.	
		Acres.	Amount.	Cash.	Bounty-land scrip.
Ohio .....	Chillicothe .....	45. 87	\$114 67	\$114 67	.....
Indiana .....	Indianapolis .....	396. 30	660 38	660 38	.....
Illinois .....	Springfield .....	3, 948. 09	5, 134 79	5, 134 79	.....
Missouri .....	Boonville .....	11, 183. 04	18, 515 60	18, 446 23	\$89 37
Do .....	Linton .....	1, 656. 47	4, 450 13	4, 450 13	.....
Do .....	Springfield .....	3, 820. 52	6, 763 15	6, 763 15	.....
Total .....	.....	16, 660. 03	29, 728 88	29, 659 51	69 37
Alabama .....	Mobile .....	.....	32 50	32 50	.....
Do .....	Huntsville .....	.....	.....	.....	.....
Do .....	Montgomery .....	.....	273 01	273 01	.....
Total .....	.....	.....	305 51	305 51	.....
Mississippi .....	Jackson .....	.....	58 69	58 69	.....
Louisiana .....	New Orleans .....	.....	853 75	853 75	.....
Do .....	Monroe .....	.....	.....	.....	.....
Do .....	Natchitoches .....	.....	.....	.....	.....
Total .....	.....	.....	853 75	853 75	.....
Michigan .....	Detroit .....	4, 639. 02	5, 798 80	3, 598 80	2, 200 00
Do .....	East Saginaw .....	8, 281. 82	15, 506 84	6, 285 00	9, 221 84
Do .....	Ionia .....	3, 725. 06	11, 396 32	11, 396 32	.....
Do .....	Marquette .....	8, 850. 81	13, 747 55	12, 847 55	900 00
Do .....	Traverse City .....	4, 298. 74	9, 767 49	9, 767 49	.....
Total .....	.....	29, 795. 45	56, 217 00	43, 895 16	12, 321 84
Arkansas .....	Little Rock .....	.....	835 05	835 05	.....
Do .....	Washington .....	.....	45 08	45 08	.....
Do .....	Clarksville .....	.....	1, 518 50	1, 518 50	.....
Do .....	Camden .....	.....	.....	.....	.....
Do .....	Harrison .....	.....	.....	.....	.....
Do .....	Dardanelle .....	.....	.....	.....	.....
Total .....	.....	.....	2, 398 63	2, 398 63	.....
Florida .....	Tallahassee .....	.....	241 25	241 25	.....
Iowa .....	Fort Des Moines .....	97. 02	121 28	121 28	.....
Do .....	Council Bluffs .....	80. 00	100 00	100 00	.....
Do .....	Fort Dodge .....	19, 223. 34	32, 855 46	32, 855 46	.....
Do .....	Sioux City .....	21, 487. 92	46, 216 87	46, 216 87	.....
Total .....	.....	40, 888. 28	79, 293 61	79, 293 61	.....



*ber of acres entered under the homestead law of May 20, 1862, of commissions received under mechanic act of July 2, 1862, and commissions received by registers and receivers on the value commencing July 1, 1870, and ending June 30, 1871.*

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the first half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the first half of said fiscal year, with agricultural college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Amount.
160.00	\$20 00	\$7 00	\$27 00	205.87	\$134 67	.....	.....	\$602 74
.....	.....	.....	.....	396.30	660 38	.....	.....	.....
.....	.....	.....	.....	3,948.09	5,134 79	.....	.....	552 96
37,418.71	3,025 00	1,568 78	4,593 78	48,601.75	21,540 60	\$320.00	\$8 00	1,105 27
23,479.49	1,735 00	718 63	2,453 63	25,135.96	6,185 13	1,280.00	32 00	687 49
57,985.66	4,255 00	2,078 00	6,333 00	61,806.18	11,618 15	160.00	4 00	754 26
118,883.86	9,015 00	4,365 41	13,380 41	135,543 89	38,743 88	1,760.00	44 00	2,546 93
12,594.86	920 00	353 00	1,273 00	12,594.86	952 50	.....	.....	525 60
14,036.15	1,015 00	387 00	1,402 00	14,036.15	1,015 00	.....	.....	610 00
38,508.42	3,480 00	1,329 00	4,809 00	38,508.42	3,753 01	.....	.....	754 89
65,139.43	5,415 00	2,069 00	7,484 00	65,139.43	5,720 51	.....	.....	1,890 49
38,260.96	2,960 00	1,073 78	4,033 78	38,260.96	3,018 69	.....	.....	645 14
49,406.64	3,260 00	1,304 00	4,564 00	49,406.64	4,113 75	.....	.....	531 09
49,406.64	3,260 00	1,304 00	4,564 00	49,406.64	4,113 75	.....	.....	531 09
12,968.53	885 00	405 56	1,290 56	17,607.55	6,683 80	.....	.....	789 21
10,272.53	865 00	472 13	1,337 13	18,554.35	16,371 84	.....	.....	762 09
37,845.42	3,420 00	1,947 82	5,367 82	41,570.48	14,816 32	.....	.....	761 27
2,575.38	190 00	117 14	307 14	11,426.19	13,937 55	.....	.....	774 94
26,919.78	2,530 00	1,448 38	3,978 38	31,218.52	12,297 49	.....	.....	740 41
90,581.64	7,890 00	4,391 03	12,281 03	120,377.09	64,107 00	.....	.....	3,827 92
77,573.00	6,875 00	2,638 60	9,513 60	77,573.00	7,710 05	.....	.....	797 70
25,536.66	1,888 00	711 37	2,599 37	25,536.66	1,933 08	.....	.....	334 77
112,902.77	8,874 00	3,303 09	12,177 09	112,902.77	10,392 50	.....	.....	1,062 03
216,012.43	17,637 00	6,653 06	24,290 06	216,012.43	20,035 63	.....	.....	2,134 55
24,969.55	1,790 00	706 00	2,496 00	24,969.55	2,031 25	.....	.....	382 03
540.00	50 00	24 80	74 80	637.02	171 28	.....	.....	783 04
1,589.41	160 00	141 71	301 71	1,669.41	260 00	.....	.....	502 00
14,486.83	1,885 00	1,105 40	2,990 40	33,710.17	34,730 46	.....	.....	1,157 10
69,870.50	6,490 00	3,083 00	9,573 00	91,358.42	52,706 87	9,900 76	248 00	1,526 32
86,486.74	8,585 00	4,354 91	12,939 91	127,374.02	87,878 61	9,900 76	248 00	3,968 46

No. 2.—Statement of public lands sold, of cash and bounty-land scrip received therefor,

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25 per acre, and amount received for the same, for the first half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the first half of the fiscal year ending June 30, 1871, mentioned in the first column.	
		Acres.	Amount.	Cash.	Bounty-land scrip.
Wisconsin .....	Menasha .....	16,955.58	\$21,544.49	\$21,544.49	.....
Do .....	Falls of St. Croix .....	12,574.63	29,165.10	29,165.10	.....
Do .....	Stevens's Point .....	17,280.31	21,692.08	19,705.96	\$1,986.12
Do .....	La Crosse .....	8,292.44	11,659.74	11,659.64	.....
Do .....	Bayfield .....	15,498.01	33,611.63	33,611.63	.....
Do .....	Eau Claire .....	19,648.88	25,343.96	25,343.96	.....
Total .....	.....	90,249.85	143,017.00	141,030.88	1,986.12
California .....	San Francisco .....	20,457.16	36,755.75	36,755.75	.....
Do .....	Sacramento .....	15,920.68	25,911.85	25,911.85	.....
Do .....	Marysville .....	41,822.42	61,512.50	61,512.50	.....
Do .....	Humboldt .....	18,127.36	23,360.73	23,360.73	.....
Do .....	Susanville .....	.....	.....	.....	.....
Do .....	Stockton .....	26,774.86	35,363.90	35,363.90	.....
Do .....	Los Angeles .....	2,439.91	3,358.23	3,358.23	.....
Do .....	Visalia .....	4,646.79	9,513.55	9,513.55	.....
Do .....	Shasta .....	.....	.....	.....	.....
Total .....	.....	130,189.18	195,776.51	195,776.51	.....
Nevada .....	Carson City .....	1,364.07	1,895.00	1,895.00	.....
Do .....	Austin .....	46.75	261.90	261.90	.....
Do .....	Belmont .....	.....	.....	.....	.....
Do .....	Aurora .....	1,359.53	1,699.42	1,699.42	.....
Total .....	.....	2,770.35	3,856.32	3,856.32	.....
Washington Ter. ....	Olympia .....	71,719.59	89,665.22	89,665.22	.....
Do .....	Vancouver .....	28,737.49	38,854.88	38,854.88	.....
Total .....	.....	100,457.08	128,520.10	128,520.10	.....
Minnesota .....	Taylor's Falls .....	4,068.58	6,545.60	6,545.60	.....
Do .....	St. Cloud .....	30,327.51	43,812.30	43,812.30	.....
Do .....	Jackson .....	4,964.68	8,071.89	8,071.89	.....
Do .....	New Ulm .....	4,827.86	10,568.40	10,568.40	.....
Do .....	Litchfield .....	3,122.87	6,236.38	6,236.38	.....
Do .....	Du Luth .....	1,921.12	5,919.40	5,919.40	.....
Do .....	Alexandria .....	33,807.14	42,459.03	42,459.03	.....
Total .....	.....	83,039.76	123,613.00	123,613.00	.....
Oregon .....	Oregon City .....	5,893.69	9,551.71	9,551.71	.....
Do .....	Roseburgh .....	11,351.99	16,470.00	16,470.00	.....
Do .....	Le Grand .....	5,759.73	7,217.75	7,217.75	.....
Total .....	.....	23,005.41	33,239.46	33,239.46	.....
Kansas .....	Topeka .....	7,398.29	11,776.34	11,776.34	.....
Do .....	Junction City .....	88,870.32	140,846.88	136,911.05	3,935.83
Do .....	Humboldt .....	10,759.36	14,425.28	14,425.28	.....
Do .....	Concordia .....	.....	.....	.....	.....
Do .....	Augusta .....	.....	.....	.....	.....
Do .....	Salina .....	.....	.....	.....	.....
Total .....	.....	107,027.97	167,058.50	163,122.67	3,935.83

number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the first half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the first half of said fiscal year with agricultural college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Amount.
7, 144.80	\$515 00	\$250 86	\$765 86	24, 100.38	\$22, 059 49	.....	.....	\$954 53
15, 209.30	1, 280 00	683 39	1, 963 39	27, 783.93	30, 445 10	.....	.....	1, 083 30
5, 419.16	440 00	203 65	643 65	22, 699.47	22, 132 08	.....	.....	1, 008 92
24, 892.74	1, 940 00	985 97	2, 925 97	33, 185.18	13, 599 74	80.00	\$4 00	750 05
12, 428.99	958 79	629 45	1, 588 24	15, 498.01	33, 611 63	.....	.....	1, 244 42
				32, 077.87	26, 302 75	480.00	12 00	1, 006 86
65, 094.99	5, 133 79	2, 753 32	7, 887 11	155, 344.84	148, 150 79	560.00	16 00	6, 048 08
17, 891.60	1, 177 50	928 00	2, 105 50	38, 348.76	37, 933 25	26, 400.00	660 00	1, 605 78
23, 989.94	1, 805 00	1, 132 37	2, 937 37	39, 910.62	27, 716 85	2, 200.00	56 00	1, 137 31
12, 639.88	935 00	668 32	1, 603 32	54, 462.30	62, 447 50	5, 600.00	140 00	2, 364 27
6, 087.03	385 00	234 00	619 00	24, 214.39	23, 745 73	5, 120.00	128 00	1, 007 95
23, 716.38	1, 560 00	1, 038 61	2, 598 61	50, 491.24	36, 923 90	.....	.....	1, 611 28
1, 863.58	130 00	126 00	256 00	4, 303.49	3, 488 23	2, 080.00	52 00	283 58
4, 499.04	340 00	379 00	719 00	9, 145.83	9, 853 55	3, 520.00	88 00	990 26
90, 687.45	6, 332 50	4, 506 30	10, 838 80	220, 876.63	202, 109 01	44, 920.00	1, 124 00	9, 000 43
1, 115.31	80 00	48 00	128 00	2, 479.38	1, 975 00	.....	.....	609 18
160.00	10 00	6 00	16 00	206.75	271 90	.....	.....	582 20
618.80	40 00	30 00	70 00	1, 978.33	1, 739 42	.....	.....	.....
1, 894.11	130 00	84 00	214 00	4, 664.46	3, 986 32	.....	.....	1, 191 38
16, 184.51	1, 085 00	753 55	1, 838 55	87, 904.10	90, 750 22	6, 558.51	164 00	2, 858 78
28, 422.03	1, 915 00	1, 373 45	3, 298 45	57, 159.52	46, 769 88	320.00	8 00	1, 292 05
44, 606.54	3, 000 00	2, 137 00	5, 137 00	145, 063.62	131, 520 10	6, 878.51	172 00	4, 150 83
16, 264.31	1, 370 00	653 68	2, 023 68	20, 333.89	7, 915 60	960.00	24 00	465 11
29, 212.21	2, 235 00	1, 351 68	3, 586 68	59, 539.72	46, 407 30	12, 800.00	320 00	1, 303 74
29, 536.84	2, 330 00	2, 144 79	4, 474 79	34, 501.52	10, 401 89	1, 920.00	48 00	738 51
27, 557.67	2, 450 00	1, 728 27	4, 178 27	32, 385.53	13, 018 40	4, 640.00	116 00	562 47
16, 532.69	1, 835 00	1, 303 40	3, 138 40	19, 655.56	8, 071 38	.....	.....	645 74
6, 434.96	510 00	224 18	734 18	8, 356.08	6, 429 40	3, 038.63	76 00	618 40
49, 927.95	3, 250 00	1, 315 89	4, 565 89	83, 735.09	45, 709 03	4, 795.78	119 89	999 12
175, 466.63	13, 980 00	8, 721 89	22, 701 89	258, 506.39	137, 593 00	28, 154.41	703 89	5, 333 09
17, 525.11	1, 325 00	946 34	2, 271 34	23, 418.80	10, 876 71	.....	.....	816 19
15, 091.42	1, 095 00	770 23	1, 865 23	26, 443.41	17, 565 00	4, 480.00	112 00	1, 158 31
6, 488.24	420 00	271 06	691 06	12, 247.97	7, 637 75	.....	.....	943 36
39, 104.77	2, 840 00	1, 987 63	4, 827 63	62, 110 18	36, 079 46	4, 480.00	112 00	2, 917 86
35, 778.15	4, 010 00	1, 949 54	5, 959 54	43, 176.44	15, 786 34	2, 400.00	60 00	692 65
260, 994 40	18, 710 00	8, 455 73	27, 165 73	349, 864.72	159, 556 88	34, 836.63	876 00	3, 187 61
14, 665.84	1, 495 00	705 29	2, 200 29	25, 425.20	15, 930 28	1, 068.82	28 00	863 70
311, 438 39	24, 215 00	11, 110 56	35, 325 56	418, 466.36	191, 273 50	38, 305.45	964 00	4, 743 96



No. 2.—Statement of public lands sold, of cash and bounty-land scrip received therefor,

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25 per acre, and amount received for the same, for the first half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the first half of the fiscal year ending June 30, 1871, mentioned in the first column.	
		Acres.	Amount.	Cash.	Bounty land scrip.
Nebraska .....	West Point .....	4,346.53	\$12,222 09	\$12,222 09	.....
Do. ....	Beatrice .....	26,531.03	33,954 97	33,954 97	.....
Do. ....	Lincoln .....	12,178.54	33,099 37	33,099 37	.....
Do. ....	Dakota City .....	85,770.90	108,711 21	108,711 21	.....
Do. ....	Grand Island .....	3,683.83	9,310 44	9,310 44	.....
Total .....	.....	132,510.83	197,298 08	197,298 08	.....
New Mexico Ter...	Santa Fé .....	2,761.15	3,453 16	3,453 16	.....
Dakota Ter. ....	Springfield .....	.....	.....	.....	.....
Do. ....	Vermillion .....	17,621.39	22,026 79	22,026 79	.....
Do. ....	Pembina .....	.....	.....	.....	.....
Total .....	.....	17,621.39	22,026 79	22,026 79	.....
Colorado Ter. ....	Pueblo .....	.....	.....	.....	.....
Do. ....	Central City .....	3,543.94	4,810 20	4,810 20	.....
Do. ....	Denver City .....	28,253.69	45,854 43	45,854 43	.....
Do. ....	Fair Play .....	1,263.58	1,661 25	1,661 25	.....
Total .....	.....	33,061.21	52,325 88	52,325 88	.....
Idaho Ter. ....	Boise City .....	861.89	1,077 37	1,077 37	.....
Do. ....	Lewiston .....	.....	.....	.....	.....
Total .....	.....	861.89	1,077 37	1,037 77	.....
Montana Ter. ....	Helena .....	3,653.42	6,040 87	6,040 87	.....
Arizona Ter. ....	Prescott .....	.....	.....	.....	.....
Utah Ter. ....	Salt Lake City .....	5,175.60	6,686 73	6,686 73	.....
Wyoming Ter. ....	Cheyenne .....	.....	.....	.....	.....

DEPARTMENT OF THE INTERIOR,  
General Land Office, November 1, 1871.

number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the first half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the first half of said fiscal year with agricultural college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Amount.
23,248.10	\$1,830 00	\$999 58	\$2,829 58	27,594.63	\$14,052 09	480.00	\$12 00	\$573 04
56,027.99	4,185 00	2,050 46	6,235 46	62,559.02	38,139 97	160.00	4 00	1,183 08
106,292.68	10,560 00	5,475 00	16,035 00	118,471.22	43,659 37	2,400.00	60 00	1,236 98
28,424.35	1,646 00	916 00	2,562 00	114,195.25	110,357 21	160.00	4 00	2,773 22
21,025.63	2,065 00	1,045 95	3,110 95	24,709.46	11,375 44	-----	-----	1,140 54
235,018.75	20,286 00	10,486 99	30,772 99	367,529.58	217,584 08	3,200.00	80 00	6,906 86
14,387.72	910 00	538 21	1,448 21	17,148.87	4,363 16	-----	-----	902 66
49,629.49	3,135 00	1,280 88	4,415 88	67,253.88	25,161 79	-----	-----	778 10
49,629.49	3,135 00	1,280 88	4,415 88	67,250.88	25,161 79	-----	-----	778 10
1,114.54	85 60	57 00	142 00	4,658.48	4,895 20	960.00	24 00	890 81
43,801.20	3,380 00	2,536 50	5,916 50	72,054.89	49,234 43	6,960.00	174 00	1,756 58
-----	-----	-----	-----	1,263.58	1,661 25	-----	-----	872 22
44,915.74	3,465 00	2,593 50	6,058 50	77,976.95	55,790 88	7,920.00	198 00	3,519 61
11,059.91	710 00	426 00	1,136 00	11,921.80	1,787 37	-----	-----	571 56
11,059.91	710 00	426 00	1,136 00	11,921.80	1,787 37	-----	-----	571 56
19,895.91	1,250 00	1,755 00	3,005 00	23,549.33	7,220 87	160.00	4 00	774 25
22,254.99	1,050 00	616 68	1,666 68	27,430.59	7,736 73	1,600.00	40 60	-----

WILLIS DRUMMOND,  
Commissioner.

No. 2.—Statement of the public lands sold, of cash and bounty-land scrip received therefor,

## RECAPIT

States and Territories.	Quantity sold for cash and bounty-land scrip at and above the minimum price of \$1 25, and amount received for the same, for the first half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and bounty-land scrip, respectively, for the first half of the fiscal year ending June 30, 1871, mentioned in the first column.	
	Aeres.	Amount.	Cash.	Bounty-land scrip.
Ohio.....	45.87	\$114 67	\$114 67	
Indiana.....	396.30	600 38	600 38	
Illinois.....	3,948.09	5,134 79	5,134 79	
Missouri.....	16,660.03	29,728 88	29,650 51	\$69 37
Alabama.....		305 51	305 51	
Mississippi.....		58 69	58 69	
Louisiana.....		853 75	853 75	
Michigan.....	29,795.45	56,217 00	43,895 16	12,321 84
Arkansas.....		2,398 63	2,398 63	
Florida.....		241 25	241 25	
Iowa.....	40,888.28	79,293 61	79,293 61	
Montana Ter.....	3,653.42	6,040 87	6,040 87	
Arizona Ter.....				
Utah Ter.....	5,175.60	6,686 73	6,686 73	
Wisconsin.....	90,249.85	143,017 00	141,030 88	1,986 12
California.....	130,189.18	195,776 51	195,776 51	
Nevada.....	2,770.35	3,856 32	3,856 32	
Minnesota.....	83,039.76	123,613 00	123,613 00	
Oregon.....	23,005.41	33,239 46	33,239 46	
Kansas.....	107,027.97	167,058 50	163,122 67	3,935 83
Washington Ter.....	100,457.08	128,520 10	128,520 10	
Nebraska.....	132,510.83	197,298 08	197,298 08	
New Mexico Ter.....	2,761.15	3,453 16	3,453 16	
Dakota Ter.....	17,621.39	22,026 79	22,026 79	
Colorado Ter.....	33,061.21	52,325 88	52,325 88	
Idaho Ter.....	861.89	1,077 37	1,077 37	
Wyoming Ter.....				
Total.....	824,119.11	1,258,996 93	1,240,683 77	18,313 16

To which add number of aeres located with agricultural scrip, and commissions thereon...  
Also, commissions received on homestead entries, as shown in column No. 3, of section 3....



number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

ULATION.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions, under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the first half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty-land scrip and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the first half of said fiscal year with agricultural college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Aggregate of \$5 & \$10 payments.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Amount.
160.00	\$20 00	\$7 00	\$27 00	205.87	\$134 67			\$602 74
				396.30	660 38			
				3,948.09	5,134 79			552 96
118,883.86	9,015 00	4,365 41	13,380 41	135,543.89	38,743 88	1,760.00	\$44 00	2,546 93
65,139.43	5,415 00	2,069 00	7,484 00	65,139.43	5,720 51			1,890 49
38,260.96	2,960 00	1,073 78	4,033 78	38,260.96	3,018 69			645 14
49,406.64	3,260 00	1,304 00	4,564 00	49,406.64	4,113 75			531 09
90,581.64	7,890 00	4,391 03	12,281 03	120,377.09	64,107 00			3,827 92
216,012.43	17,637 00	6,653 06	24,290 06	216,012.43	20,035 63			2,134 55
24,969.55	1,790 00	706 00	2,496 00	24,969.55	2,031 25			382 08
86,486.74	8,585 00	4,354 91	12,939 91	127,375.02	87,878 61	9,900.76	248 00	3,968 46
19,895.91	1,250 00	1,755 00	3,005 00	23,549.33	7,290 87	160.00	4 00	774 25
								500 00
22,254.99	1,050 00	616 68	1,666 68	27,430.59	7,736 73	1,600.00	40 00	573 93
65,094.99	5,133 79	2,753 32	7,887 11	155,344.84	148,150 79	560.00	16 00	6,048 08
90,687.45	6,332 50	4,506 30	10,838 80	220,876.63	202,109 01	44,920.00	1,124 00	9,000 43
1,894.11	130 00	84 00	214 00	4,664.46	3,986 32			1,191 38
175,466.63	13,950 00	8,721 89	22,701 89	258,506.39	137,593 00	28,154.41	703 89	5,333 09
39,104.77	2,840 00	1,987 63	4,827 63	62,110.18	36,079 46	4,480.00	112 00	2,917 86
311,438.39	24,215 00	11,110 56	35,325 56	418,466.36	191,273 50	38,305.45	964 00	4,743 96
44,606.54	3,000 00	2,137 00	5,137 00	145,063.62	131,520 10	6,878.51	172 00	4,150 83
235,018.75	20,286 00	10,486 99	30,772 99	367,529.58	217,584 08	3,200.00	80 00	6,906 86
14,387.72	910 00	538 21	1,448 21	17,148.87	4,363 16			902 66
49,629.49	3,135 00	1,280 88	4,415 88	67,250.88	25,161 79			773 10
44,915.74	3,465 00	3,593 50	6,058 50	77,976.95	55,790 88	7,920.00	198 00	3,519 61
11,059.91	710 00	426 00	1,136 00	11,921.80	1,787 37			571 56
1,815,356.64	143,009 29	73,922 15	216,931 44	2,639,475.75	1,402,006 22	147,839.13	3,705 89	
				147,839.13	3,705 89			
					73,922 15			
				2,787,314.88	1,479,634 26			

WILLIS DRUMMOND,  
Commissioner.

No. 3.—Statement of public lands sold, of cash and bounty-land scrip received therefor, number section of said act; also, of land located with scrip under the agricultural college and thereof, and statement of incidental expenses thereon, in the second half of the fiscal year

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25 per acre, and amount received for the same, for the second half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the second half of the fiscal year ending June 30, 1871.	
		Acres.	Amount.	Cash.	Bounty-land scrip.
Ohio .....	Chillicothe .....	87. 74	\$113 40	\$113 40	.....
Indiana .....	Indianapolis .....	169. 73	212 16	150 87	\$61 29
Illinois .....	Springfield .....	1, 285. 21	1, 954 09	1, 954 09	.....
Missouri .....	Booneville .....	4, 705. 66	9, 449 11	9, 449 11	.....
Do .....	Ironton .....	3, 010. 52	5, 271 04	5, 271 04	.....
Do .....	Springfield .....	3, 548. 71	5, 163 06	5, 063 06	100 00
Total .....	.....	11, 264. 89	19, 883 21	19, 783 21	100 00
Alabama .....	Huntsville .....	.....	45 04	45 04	.....
Do .....	Montgomery .....	.....	151 43	151 43	.....
Do .....	Mobile .....	.....	666 36	666 36	.....
Total .....	.....	.....	862 83	862 83	.....
Mississippi .....	Jackson .....	.....	36 55	36 55	.....
Louisiana .....	New Orleans .....	3. 57	942 60	942 60	.....
Do .....	Natchitoches .....	.....	532 15	532 15	.....
Total .....	.....	3. 57	1, 474 75	1, 474 75	.....
Michigan .....	Detroit .....	3, 087. 40	4, 047 84	2, 203 11	1, 844 73
Do .....	East Saginaw .....	18, 782. 48	68, 869 55	58, 684 76	10, 184 79
Do .....	Ionia .....	6, 616. 67	15, 076 20	15, 076 20	.....
Do .....	Marquette .....	18, 915. 78	25, 756 82	25, 081 82	675 00
Do .....	Traverse City .....	4, 961. 39	12, 573 53	12, 573 53	.....
Total .....	.....	52, 363. 72	126, 323 94	113, 619 42	12, 704 52
Arkansas .....	Little Rock .....	.....	1, 510 20	1, 510 20	.....
Do .....	Camden .....	.....	249 50	249 50	.....
Do .....	Harrison .....	.....	.....	.....	.....
Do .....	Dardanelle .....	.....	10 00	10 00	.....
Do .....	Clarksville .....	.....	280 76	280 76	.....
Total .....	.....	.....	2, 050 46	2, 050 46	.....
Florida .....	Tallahassee .....	.....	.....	.....	.....
Iowa .....	Fort Des Moines .....	100. 55	125 70	75 70	50 00
Do .....	Council Bluffs .....	214. 05	267 56	267 56	.....
Do .....	Fort Dodge .....	2, 060. 83	3, 801 99	3, 801 99	.....
Do .....	Sioux City .....	6, 879. 62	27, 558 59	27, 558 59	.....
Total .....	.....	9, 255. 05	31, 753 84	31, 703 84	50 00
Montana Ter. ....	Helena .....	2, 302. 98	4, 677 92	4, 677 92	.....

*ber of acres entered under the homestead law of May 20, 1862, of commissions received under mechanic act of July 2, 1862, and commissions received by registers and receivers on the value commencing July 1, 1870, and ending June 30, 1871.*

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions, under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the second half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also, bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the second half of said fiscal year, with agricultural-college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Am't.
640.00	\$70 00	\$34 51	\$104 51	727.74	\$183 40	.....	.....	\$602 24
40.00	5 00	1 00	6 00	209.73	217 16	.....	.....	567 23
.....	.....	.....	.....	1,285.21	1,954 09	.....	.....	1,160 93
40,208.61	3,250 00	1,891 56	5,141 56	44,914.27	12,699 11	240.00	\$8 00	927 24
31,311.82	2,320 00	1,045 70	3,365 70	34,322.34	7,591 04	.....	.....	728 61
69,117.14	5,200 00	2,633 00	7,833 00	72,665.85	10,363 06	.....	.....	1,037 17
140,637.57	10,770 00	5,570 26	16,340 26	151,902.46	30,653 21	240.00	8 00	2,693 02
19,307.53	1,450 00	557 00	2,007 00	19,307.53	1,495 04	.....	.....	540 90
33,512.88	3,080 00	1,179 00	4,259 00	33,512.88	3,231 43	.....	.....	833 80
11,341.11	835 00	318 00	1,153 00	11,341.11	1,501 36	.....	.....	508 87
64,161.52	5,365 00	2,054 00	7,419 00	64,161.52	6,227 83	.....	.....	1,883 57
32,517.36	2,610 00	928 05	3,538 05	32,517.36	2,646 55	.....	.....	692 68
61,913.39	4,065 00	1,610 04	5,675 04	61,916.96	5,007 60	.....	.....	671 28
21,181.32	1,575 00	592 69	2,167 69	21,181.32	2,107 15	.....	.....	695 09
83,094.71	5,640 00	2,202 73	7,842 73	83,098.28	7,114 75	.....	.....	1,366 37
9,983.92	690 00	344 20	1,034 20	13,071.32	4,737 84	.....	.....	865 14
5,499.82	435 00	324 83	759 83	24,282.30	69,304 55	.....	.....	1,286 18
36,265.98	2,910 00	1,579 53	4,489 53	42,882.65	17,986 20	.....	.....	894 67
5,852.63	410 00	261 89	671 89	24,768.41	26,166 82	7,760.00	194 00	1,086 42
37,271.99	3,085 00	2,061 36	5,146 36	42,233.38	15,658 53	.....	.....	823 46
94,874.34	7,530 00	4,571 81	12,101 81	147,238.06	133,853 94	7,760.00	194 00	4,955 87
70,105.52	5,860 00	2,341 06	8,201 06	70,105.52	7,370 20	.....	.....	819 22
42,297.21	3,130 05	1,146 78	4,276 83	42,297.21	3,379 55	.....	.....	855 02
6,784.45	530 00	188 05	718 05	6,784.45	540 00	.....	.....	208 70
31,822.13	2,465 00	935 44	3,400 44	31,822.13	2,745 76	.....	.....	556 60
151,009.31	11,985 05	4,611 33	16,596 38	151,009.31	14,035 51	.....	.....	2,439 54
751.89	75 00	54 66	129 66	852.44	200 70	.....	.....	548 38
2,827.56	265 00	171 34	436 34	3,041.61	532 56	.....	.....	528 98
11,900.11	1,280 00	989 25	2,269 25	13,960.94	5,081 99	.....	.....	673 06
83,727.85	7,915 00	4,078 00	11,993 00	90,607.47	35,473 59	10,560.00	264 00	1,223 51
99,207.41	9,535 00	5,293 25	14,828 25	108,462.46	41,288 84	10,560.00	261 00	2,973 93
28,442.87	1,790 00	1,071 00	2,861 00	30,745.85	6,467 92	14,264.11	356 00	773 56



No. 3.—Statement of public lands sold, of cash and bounty-land scrip received therefor.

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1.25 per acre, and amount received for the same, for the second half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the second half of the fiscal year ending June 30, 1871.	
		Acres.	Amount.	Cash.	Bounty land-scrip.
Arizona Ter .....	Prescott .....	160.00	\$200 00	\$200 00	.....
Utah Ter .....	Salt Lake City .....	17,716.02	22,312 39	22,312 39	.....
Wisconsin .....	Menasha .....	29,893.22	38,299 37	38,299 37	.....
Do. ....	Falls of St. Croix .....	3,200.42	6,510 50	6,510 50	.....
Do. ....	Storm's Point .....	16,960.42	24,175 85	23,869 60	\$306 25
Do. ....	La Crosse .....	6,237.84	8,741 85	8,741 85	.....
Do. ....	Bayfield .....	8,579.21	16,383 48	12,737 23	3,646 25
Do. ....	Eau Claire .....	29,885.52	38,970 79	38,554 13	416 66
Total .....	.....	94,756.63	133,081 84	128,712 68	4,369 16
California .....	San Francisco .....	23,365.92	40,630 06	40,639 06	.....
Do. ....	Sacramento .....	11,508.90	29,399 80	29,399 80	.....
Do. ....	Marysville .....	21,826.13	52,869 79	52,869 79	.....
Do. ....	Humboldt .....	12,971.76	17,793 10	17,793 10	.....
Do. ....	Susanville .....	960.00	1,400 00	1,400 00	.....
Do. ....	Stockton .....	6,935.93	10,582 75	10,582 75	.....
Do. ....	Los Angeles .....	1,737.60	2,171 98	2,171 98	.....
Do. ....	Visalia .....	1,856.52	3,561 69	3,561 69	.....
Do. ....	Shasta .....	9,834.42	13,318 11	13,318 11	.....
Total .....	.....	90,997 18	171,736 28	171,736 28	.....
Nevada .....	Carson City .....	625.94	786 66	786 66	.....
Do. ....	Austin .....	367.12	670 00	670 00	.....
Do. ....	Belmont .....	.....	.....	.....	.....
Do. ....	Aurora .....	920.60	1,150 75	1,150 75	.....
Total .....	.....	1,913.66	2,607 41	2,607 41	.....
Minnesota .....	Taylor's Falls .....	12,710.95	28,255 35	28,255 35	.....
Do. ....	St. Cloud .....	22,053.99	28,935 06	24,935 06	4,000 00
Do. ....	Alexandria .....	10,326.99	13,267 09	6,727 15	6,539 94
Do. ....	Jackson .....	7,218.04	12,041 46	12,041 46	.....
Do. ....	New Ulm .....	2,714.09	5,910 97	5,910 97	.....
Do. ....	Litchfield .....	2,851.26	4,879 65	4,879 65	.....
Do. ....	Du Luth .....	1,271.80	6,291 76	2,555 35	3,736 41
Total .....	.....	59,147.12	99,581 34	85,304 99	14,276 35
Oregon .....	Oregon City .....	22,631.40	32,282 73	32,282 73	.....
Do. ....	Roseburgh .....	28,711.58	38,733 74	38,733 74	.....
Do. ....	Le Grand .....	2,612.85	3,330 98	3,330 98	.....
Total .....	.....	53,955.83	74,347 45	74,347 45	.....
Kansas .....	Topeka .....	10,918.34	17,329 11	17,329 11	.....
Do. ....	Junction City .....	936.47	4,386 70	4,186 70	200 00
Do. ....	Humboldt .....	6,610.62	9,293 23	9,293 23	.....
Do. ....	Concordia .....	6,182.55	27,054 85	27,054 85	.....
Do. ....	Augusta .....	11,254.76	17,634 33	14,901 00	2,733 33
Do. ....	Salina .....	1,576.22	5,454 96	5,454 96	.....
Total .....	.....	37,478.96	81,153 18	78,219 85	2,933 33

number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions, under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the second half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the second half of said fiscal year, with agricultural-college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Am't.
				160.00	\$200 00			\$504 00
24,454.57	\$1,705 00	\$998 28	\$2,703 28	42,170.59	24,017 39	16,880.00	\$420 00	823 24
7,893.65	600 00	244 00	844 00	37,786.87	38,899 37			1,364 54
13,142.93	1,215 00	646 35	1,861 35	16,343.35	7,725 50	160.00	4 00	449 32
3,603.15	310 00	158 22	468 22	20,563.57	24,485 85			983 50
22,177.14	1,650 00	910 89	2,560 89	28,414.98	10,391 85			558 48
480.00	30 00	16 00	46 00	9,059.21	16,413 48	320.00	8 00	843 31
19,500.51	1,140 00	604 13	1,744 13	45,786.03	40,110 79	640.00	16 00	1,279 40
63,197.38	4,945 00	2,579 59	7,524 59	157,954.01	138,026 84	1,120.00	28 00	5,478 55
15,971.57	1,077 50	882 50	1,960 00	39,337.49	41,716 56	35,565.69	892 00	1,650 28
9,085.40	780 00	505 50	1,285 50	20,594.30	30,179 80	27,039.09	676 00	1,104 50
66,937.58		728 79	1,728 79	88,763.71	53,869 79	13,701.90	368 00	1,379 41
7,738.72	485 00	307 02	792 02	20,710.48	18,278 10	3,200.00	80 00	1,487 05
1,600.00	100 00	64 50	164 50	2,560.00	1,500 00			591 50
13,466.77	880 00	717 99	1,597 99	20,402.70	11,462 75	19,359.17	508 00	2,164 64
1,276.64	90 00	66 00	156 00	3,014.24	2,261 98	1,437.14	36 00	534 76
3,971.34	275 00	252 00	527 00	5,827.86	3,836 69	5,755.57	144 00	1,073 57
2,968.85	245 00	151 00	396 00	12,803.27	13,563 11	7,919.32	200 00	1,466 44
123,016.87	4,932 50	3,675 30	8,607 80	214,014.05	176,668 78	113,977 88	2,904 00	11,452 15
3,793.85	240 00	144 00	384 00	4,419.79	1,026 66	2,080.00	52 00	665 49
160.00	10 00	6 00	16 00	527.12	6 00			633 99
2,716.01	170 00	102 00	272 00	3,636.61	1,320 75	3,040.00	76 00	661 27
6,669.86	420 00	252 00	672 00	8,583.52	3,027 41	5,120 00	128 00	1,960 75
15,475.77	1,330 00	547 66	1,877 66	28,186.72	29,585 35	2,999.49	76 00	1,249 73
41,452.19	3,500 00	1,996 07	5,496 07	63,506.18	32,435 06	789.11	20 00	1,363 79
73,553.85	4,980 00	2,087 31	7,067 31	83,880.84	18,247 09	16,365.93	409 13	857 99
71,054.14	5,935 00	3,914 76	9,849 76	78,272.18	17,976 46	4,480.00	112 00	773 15
56,748.17	4,810 00	2,586 89	7,396 89	59,462.26	10,720 97	2,942.11	88 00	904 61
25,334.53	2,700 00	1,500 38	4,200 38	28,185.79	7,579 65			698 99
5,097.78	400 00	321 45	721 45	6,369.58	6,691 76	6,080.00	152 00	675 86
288,716.43	23,655 00	12,954 52	36,609 52	347,863.55	123,236 34	33,656.64	857 13	6,524 12
13,996.92	1,150 00	959 16	2,109 16	36,628.32	33,432 73			1,330 45
18,771.44	1,335 00	1,303 76	2,638 76	47,483.02	40,068 74	8,316.65	208 00	1,415 22
12,508.13	835 00	566 10	1,401 10	15,120.98	4,165 98	2,080.00	52 00	965 62
45,276.49	3,320 00	2,829 02	6,149 02	99,232.32	77,667 45	10,396.65	260 00	3,711 29
39,340.80	4,055 00	2,019 90	6,074 90	50,259.14	21,384 11	1,920.00	48 00	1,292 16
55,542.90	4,545 00	2,654 98	7,199 98	56,479.37	8,931 70	3,200.00	80 00	445 74
18,111.05	1,735 00	831 59	2,566 59	24,721.67	11,028 23	1,432.12	36 00	761 86
523,270.01	34,100 00	13,928 35	48,028 35	529,452.56	61,154 85	22,164.05	559 00	1,607 70
160,961.77	12,245 00	7,077 72	19,322 72	172,216.53	29,879 33	783.45	20 00	1,535 68
82,957.34	6,605 00	3,686 62	10,291 62	84,533.56	12,059 96	2,720.00	68 00	486 91
880,183.87	63,285 00	30,199 16	93,484 16	917,662.83	144,438.18	32,219.62	811 00	6,130 05

No. 3.—Statement of public lands sold, of cash and bounty-land scrip received therefor,

States and Territories.	Land offices.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25 per acre, and amount received for the same, for the second half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and in bounty-land scrip, respectively, for the second half of the fiscal year ending June 30, 1871.	
		Acres.	Amount.	Cash.	Bounty-land scrip.
Washington Ter....	Olympia .....	46,023.20	\$57,540 59	\$57,540 59	.....
Do.....	Vancouver.....	6,174.38	7,236 00	7,236 00	.....
Total .....	.....	52,197.58	64,776 59	64,776 59	.....
Nebraska .....	West Point .....	2,510.08	7,832 84	7,832 84	.....
Do.....	Beatrice .....	4,489.62	11,447 04	11,447 04	.....
Do.....	Lincoln .....	4,482.60	33,116 94	33,116 94	.....
Do.....	Dakota City .....	40,245.62	50,704 82	49,604 82	\$1,100 00
Do.....	Grand Island .....	4,714.66	12,344 64	12,344 64	.....
Total .....	.....	56,802.58	115,446 28	114,346 28	1,100 00
New Mexico Ter....	Santa Fe.....	1,235.41	1,544 75	1,544 75	.....
Dakota Ter.....	Springfield.....	493.98	617 48	617 48	.....
Do.....	Vermillion.....	1,981.11	7,847 32	7,847 32	.....
Do.....	Pembina.....	1,889.95	2,369 93	2,369 93	.....
Total .....	.....	4,365.04	10,834 73	10,834 73	.....
Colorado Ter.....	Pueblo.....	2,771.08	4,713 83	4,713 83	.....
Do.....	Central City .....	323.10	1,136 76	1,136 76	.....
Do.....	Denver City .....	13,845.55	29,200 18	29,000 18	200 00
Do.....	Fair Play.....	.....	.....	.....	.....
Total .....	.....	16,939.73	35,050 77	34,850 77	200 00
Idaho Ter .....	Boise City .....	1,464.63	1,830 81	1,830 81	.....
Do.....	Lewistown .....	.....	.....	.....	.....
Total .....	.....	1,464.63	1,830 81	1,830 81	.....
Wyoming Ter .....	Cheyenne.....	.....	.....	.....	.....

DEPARTMENT OF THE INTERIOR, *General Land Office*, November 1, 1871.



number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of registers' and receivers' commissions, under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the second half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also, bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the second half of said fiscal year, with agricultural-college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Fees.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Am't.
15,663.56	\$1,170 00	\$790 09	\$1,960 09	61,686.76	\$58,710 59	11,785.83	\$296 00	\$2,340 10
14,265.30	1,310 00	1,033 94	2,343 94	20,439.68	8,546 00	637.34	16 00	1,252 52
29,928.86	2,480 00	1,824 03	4,304 03	82,126.44	67,256 59	12,423.17	312 00	3,592 02
33,526.26	2,450 00	1,110 50	3,560 50	36,036.34	10,982 84	3,674.95	92 00	664 67
82,385.68	6,140 00	3,572 03	9,712 03	86,875.30	17,587 04	1,435.68	36 00	813 84
200,082.91	18,055 00	10,058 81	28,113 81	204,925.51	51,171 94	6,547.32	164 00	1,162 30
57,216.12	3,660 00	1,480 00	5,140 00	97,461.74	54,364 82	1,118.28	28 00	1,546 83
107,274.36	8,900 00	4,968 78	13,868 78	111,989.02	21,244 64	4,383.03	164 00	795 88
489,485.33	39,205 00	21,190 12	60,395 12	537,287.91	154,651 28	17,159.56	484 00	4,982 52
8,437.88	535 00	311 57	846 57	9,673.29	2,079 75	.....	.....	406 40
2,478.00	160 00	102 02	262 02	2,971.98	777 48	2,879.20	72 00	593 77
73,376.72	4,630 00	1,876 47	6,506 47	75,357.83	12,477 32	33,635.35	844 00	1,019 78
6,199.32	390 00	154 99	544 99	8,089.27	2,759 93	320.00	8 00	756 36
82,054.04	5,180 00	2,133 48	7,313 48	86,419.08	16,014 73	36,834.55	924 00	2,369 91
10,533.15	661 00	409 50	1,070 50	13,304.23	5,374 83	8,397.33	208 00	1,486 29
1,919.18	130 00	84 00	214 00	2,242.28	1,266 76	3,526.53	88 00	613 14
35,933.32	2,910 00	2,455 50	5,365 50	49,778.87	32,110 18	22,072.11	536 00	1,249 00
.....	.....	.....	.....	.....	.....	.....	.....	375 00
48,385.65	3,701 00	2,949 00	6,650 00	65,325.38	38,751 77	33,995.97	832 00	3,723 43
8,583.96	570 00	339 00	909 00	10,048.59	2,490 81	.....	.....	267 73
.....	.....	.....	.....	.....	.....	.....	.....	1,708 33
8,583.96	570 00	339 00	909 00	10,048.59	2,490 81	.....	.....	1,976 06
953.31	80 00	66 00	146 00	953.31	80 00	.....	.....	505 20

WILLIS DRUMMOND, *Commissioner*.

No. 3.—Statement of public lands sold, of cash and bounty-land scrip received therefor,

RECAPIT

States and Territories.	Quantity sold for cash and bounty-land scrip, at and above the minimum price of \$1 25, and amount received for the same for the second half of the fiscal year ending June 30, 1871.		Exhibit of the amount paid in cash and bounty-land scrip, respectively, for the second half of the fiscal year ending June 30, 1871, mentioned in the first column.	
	Acres.	Amount.	Cash.	Bounty-land scrip.
Ohio.....	87. 74	\$113 40	\$113 40	
Indiana.....	169. 73	212 16	150 87	\$61 29
Illinois.....	1, 285. 21	1, 954 09	1, 954 09	
Missouri.....	11, 264. 89	19, 883 21	19, 783 21	100 00
Alabama.....		862 83	862 83	
Mississippi.....		36 55	36 55	
Louisiana.....	3. 57	1, 474 75	1, 474 75	
Michigan.....	52, 363. 72	126, 323 94	113, 619 42	12, 704 52
Arkansas.....		2, 050 46	2, 050 46	
Florida.....				
Iowa.....	9, 255. 05	31, 753 84	31, 703 84	50 00
Montana Territory.....	2, 302. 98	4, 677 92	4, 677 92	
Arizona Territory.....	160. 00	200 00	200 00	
Utah Territory.....	17, 716. 02	22, 312 39	22, 312 39	
Wisconsin.....	94, 756. 63	133, 081 84	128, 712 68	4, 369 16
California.....	90, 997. 18	171, 736 28	171, 736 28	
Nevada.....	1, 913. 66	2, 607 41	2, 607 41	
Minnesota.....	59, 147. 12	99, 581 34	85, 304 99	14, 276 35
Oregon.....	53, 955. 83	74, 347 45	74, 347 45	
Kansas.....	37, 478. 96	81, 153 18	78, 219 85	2, 933 33
Washington Territory.....	52, 197. 58	64, 776 59	64, 776 59	
Nebraska.....	56, 802. 58	115, 446 28	114, 346 28	1, 100 00
New Mexico Territory.....	1, 235. 41	1, 544 75	1, 544 75	
Dakota Territory.....	4, 365. 04	10, 834 73	10, 834 73	
Colorado Territory.....	16, 939. 73	35, 050 77	34, 850 77	200 00
Idaho Territory.....	1, 464. 63	1, 830 81	1, 830 81	
Wyoming Territory.....				
Total.....	565, 863. 26	1, 003, 846 97	968, 052 32	35, 794 65

To which add number of acres located with agricultural scrip, and commissions  
Also, commissions received on homestead entries, as shown in column No. 3 of

number of acres entered under the homestead law of May 20, 1862, &c.—Continued.

ULATION.

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments, required by section 2 of the acts, and also with aggregate of registers' and receivers' commissions under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the second half of the fiscal year ending June 30, 1871.				Aggregate disposed of for cash, also bounty-land scrip, and of cash under homestead act of 1862, and acts amendatory.		Quantity of land located in the second half of said fiscal year, with agricultural-college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homestead entries in acres.	Aggregate of \$5 and \$10 payments.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	
640.00	\$70 00	\$34 51	\$104 51	727.74	\$183 40	-----	-----	\$602 24
40.00	5 00	1 00	6 00	209.73	217 16	-----	-----	567 23
-----	-----	-----	-----	1,285.21	1,954 09	-----	-----	1,160 93
140,637.57	10,770 00	5,570 26	16,340 26	151,902.46	30,653 21	240.00	\$8 00	2,693 02
64,161.52	5,365 90	2,054 00	7,419 00	64,161.52	6,227 83	-----	-----	1,883 57
32,517.36	2,610 00	928 05	3,538 05	32,517.36	2,646 55	-----	-----	692 68
83,094.71	5,640 00	2,202 73	7,842 73	83,098.28	7,114 75	-----	-----	1,366 37
94,874.34	7,530 00	4,571 81	12,101 81	147,238.06	133,853 94	7,760.00	194 00	4,955 87
151,009.31	11,985 05	4,611 33	16,496 38	151,009.31	14,035 51	-----	-----	2,439 54
-----	-----	-----	-----	-----	-----	-----	-----	-----
99,207.41	9,535 00	5,293 25	14,828 25	108,462.46	41,288 84	10,560.00	264 00	2,973 93
28,442.87	1,790 00	1,071 00	2,861 00	30,745.85	6,467 92	14,264.11	356 00	773 56
-----	-----	-----	-----	160.00	200 00	-----	-----	504 00
24,454.57	1,705 00	998 28	2,703 28	42,170.59	24,017 39	16,880.00	420 00	823 24
63,197.38	4,945 00	2,579 59	7,524 59	157,954.01	138,026 84	1,120.00	28 00	5,478 55
123,016.87	4,932 50	3,675 30	8,607 80	214,014.05	176,668 78	113,977.88	2,904 00	11,452 15
6,609.86	420 00	252 00	672 00	8,583.52	3,027 41	5,120.00	128 00	1,960 75
288,716.43	23,655 00	12,954 52	36,609 52	347,863.55	123,236 34	33,656.64	857 13	6,524 12
45,276.49	3,320 00	2,829 02	6,149 02	99,232.32	77,667 45	10,396.65	260 00	3,711 29
880,183.87	63,285 00	30,199 16	93,484 16	917,662.83	144,438 18	32,219.62	811 00	6,130 05
29,928.86	2,480 00	1,824 03	4,304 03	82,126.44	67,256 59	12,423.17	312 00	3,592 62
480,485.33	39,205 00	21,190 12	60,395 12	537,287.91	154,651 28	17,159.26	484 00	4,982 52
8,437.88	535 00	311 57	846 57	9,673.29	2,079 75	-----	-----	406 40
82,054.04	5,180 00	2,133 48	7,313 48	86,419.08	16,014 73	36,834.55	924 00	2,369 91
48,385.65	3,701 00	2,949 00	6,650 00	65,325.38	38,751 77	33,995.97	832 00	3,723 43
8,583.96	570 00	339 00	909 00	10,048.59	2,400 81	-----	-----	1,976 06
953.31	80 00	66 00	146 00	953.31	80 00	-----	-----	505 20
-----	-----	-----	-----	-----	-----	-----	-----	-----
2,784,969.59	209,313 55	108,639 01	317,952 56	3,350,382.85	1,213,160 52	346,607.85	8,782 00	64,249 23
thereon	-----	-----	-----	346,607.85	8,782 00	-----	-----	-----
section 3	-----	-----	-----	-----	108,639 01	-----	-----	-----
-----	-----	-----	-----	3,697,440.70	1,330,581 53	-----	-----	-----

Commissioner.



No. 4.—*Summary for the fiscal year ending June 30, 1871, showing the number of acres disposed of 1864, and June 21, 1866, with aggregate of \$5 and \$10 homestead payments and homestead com*

States and Territories.	Quantity sold for cash and bounty-land scrip at and above the minimum price of \$1 25, and amount received for the same for the fiscal year ending June 30, 1871.		Exhibit of the amount paid for in cash and in bounty land scrip, respectively, for the fiscal year ending June 30, 1871, mentioned in the first column.	
	Acres.	Amount.	Cash.	Military scrip.
Ohio .....	133. 61	\$228 07	\$228 07	.....
Indiana .....	566. 03	872 54	811 25	\$61 29
Illinois .....	5, 233. 30	7, 088 88	7, 088 88	.....
Missouri .....	27, 924. 92	49, 612 09	49, 442 72	169 37
Alabama .....	1, 168. 34	1, 168 34	1, 168 34	.....
Mississippi .....	.....	95 24	95 24	.....
Louisiana .....	3. 57	2, 328 50	2, 328 50	.....
Michigan .....	82, 159. 17	182, 540 94	157, 514 58	25, 026 36
Arkansas .....	.....	4, 449 09	4, 449 09	.....
Florida .....	.....	241 25	241 25	.....
Iowa .....	50, 143. 33	111, 047 45	110, 997 45	50 00
Montana Territory .....	5, 956. 40	10, 718 79	10, 718 79	.....
Arizona Territory .....	160. 00	200 00	200 00	.....
Utah Territory .....	22, 891. 62	28, 999 12	28, 999 12	.....
Wisconsin .....	185, 006. 48	276, 098 84	269, 743 56	6, 355 28
California .....	221, 186. 36	367, 512 79	367, 512 79	.....
Nevada .....	4, 684. 01	6, 463 73	6, 463 73	.....
Minnesota .....	142, 186. 88	223, 194 34	208, 917 99	14, 276 35
Oregon .....	76, 961. 24	107, 586 91	107, 586 91	.....
Kansas .....	144, 506. 93	248, 211 68	241, 342 52	6, 869 16
Washington Territory .....	152, 654. 66	193, 296 69	193, 296 69	.....
Nebraska .....	189, 313. 41	312, 744 36	311, 644 36	1, 100 00
New Mexico Territory .....	3, 996. 56	4, 997 91	4, 997 91	.....
Dakota Territory .....	21, 986. 43	32, 861 52	32, 861 52	.....
Colorado Territory .....	50, 000. 94	87, 376 65	87, 176 65	200 00
Idaho Territory .....	2, 326. 52	2, 908 18	2, 908 18	.....
Wyoming Territory .....	.....	.....	.....	.....
Total .....	1, 389, 982. 37	2, 262, 843 90	2, 208, 736 09	54, 107 81
To which add number of acres located with agricultural scrip, and commissions thereon....				
Also, commissions received on homestead entries, as shown in column No. 3 of section 3....				

*for cash, with bounty-land scrip, by entry under the homestead laws of May 20, 1862, March 21, 1863; also, locations, with agricultural college and mechanic scrip, under act of July 2, 1862.*

Quantity of land entered under homestead acts of May 20, 1862, and June 21, 1866, with aggregate of \$5 and \$10 payments required by section 2 of the acts; and also with aggregate of commissions of registers and receivers, under section 6 of said act, and of act approved March 21, 1864, amendatory thereof, for the fiscal year ending June 30, 1871.				Aggregate disposed of for cash; also bounty land scrip, and of cash, under homestead act of 1862, and acts amendatory.		Quantity of land located in the said fiscal year, with agricultural college scrip, act July 2, 1862, and registers' and receivers' commissions on value of land located.		Incidental expenses.
Area of homesteads in acres.	Aggregate of \$5 and \$10 payments.	Amount of registers' and receivers' commissions.	Aggregate of fees and registers' and receivers' commissions.	Acres.	Amount.	Acres.	Amount.	Amount.
800.00	\$90 00	\$41 51	\$131 51	933.61	\$318 07			\$1,204 98
40.00	5 00	1 00	6 00	606.03	877 54			567 23
				5,233.30	7,088 88			1,713 89
259,521.43	19,785 00	9,935 67	29,720 67	287,446.35	69,397 09	2,000.00	\$52 00	5,239 95
129,300.95	10,780 00	4,123 00	14,903 00	129,300.95	11,948 34			3,774 06
70,778.32	5,570 00	2,001 83	7,571 83	70,778.32	5,665 24			1,337 82
132,501.35	8,900 00	3,506 73	12,406 73	132,504.92	11,228 50			1,897 46
185,455.98	15,420 00	8,962 84	24,382 84	267,615.15	197,960 94	7,760.00	194 00	8,783 79
367,021.74	29,622 00	11,264 39	40,886 39	367,021.74	34,071 09			4,574 09
24,969.55	1,790 00	706 00	2,496 00	24,969.55	2,031 25			382 08
185,694.15	18,120 00	9,648 16	27,768 16	235,837.48	129,167 45	20,460.76	512 00	6,942 39
48,338.78	3,040 00	2,826 00	5,866 00	54,295.18	13,758 79	14,424.11	360 00	1,547 81
				160.00	200 00			1,004 00
46,709.56	2,755 00	1,614 96	4,369 96	69,601.18	31,754 12	18,480.00	460 00	1,397 17
128,292.37	10,078 79	5,332 91	15,411 70	313,298.85	286,177 63	1,680.00	44 00	11,526 63
213,704.32	11,265 00	8,181 60	19,446 60	434,890.68	378,777 79	158,897.88	4,028 00	20,452 58
8,563.97	550 00	336 00	886 00	13,247.98	7,013 73	5,120.00	128 00	3,152 13
464,183.06	37,635 00	21,676 41	59,311 41	606,369.94	260,829 34	61,811.05	1,561 02	11,857 21
84,381.26	6,160 00	4,816 65	10,976 65	161,342.50	113,746 91	14,876.65	372 00	6,629 15
1,191,622.26	87,500 00	41,309 72	128,809 72	1,336,129.19	335,711 68	70,525.07	1,775 00	10,874 01
74,535.40	5,480 00	3,961 03	9,441 03	227,190.06	198,776 69	19,301.68	484 00	7,743 45
715,504.08	59,491 00	31,677 11	91,168 11	904,817.49	372,235 36	20,359.26	564 00	11,889 38
22,825.60	1,445 00	849 78	2,294 78	26,822.16	6,442 91			1,309 06
131,683.53	8,315 00	3,414 36	11,729 36	153,669.96	41,176 52	36,834.55	924 00	3,148 01
93,301.39	7,166 00	5,542 50	12,708 50	143,302.33	94,542 65	41,915.97	1,030 00	7,243 04
19,643.87	1,280 00	765 00	2,045 00	21,970.39	4,188 18			2,547 62
953.31	80 00	66 00	146 00	953.31	80 00			505 20
4,600,326.23	352,322 79	182,561 16	534,883 95	5,990,308.60	2,615,166 69	494,446.98	12,488 02	139,244 19
				494,446.98	12,488 02			
					182,561 16			
				6,484,755.58	2,810,215 87			

Commissioner.

No. 5.—*Statement exhibiting the quantity of land selected for the several States under acts of Congress approved March 2, 1849, September 28, 1850, and March 12, 1860, up to and ending September 30, 1871.*

## SWAMP LANDS.

States.	4th quarter, 1870.	1st quarter, 1871.	2d quarter, 1871.	3d quarter, 1871.	Year ending June 30, 1871.	Total since date of grant.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Ohio .....						54, 438. 14
Indiana .....						1, 354, 732. 50
Illinois .....						3, 267, 470. 65
Missouri .....						4, 604, 448. 75
Alabama .....						479, 514. 44
Mississippi .....						3, 070, 645. 29
Louisiana, (act of 1849) .....						10, 774, 978. 82
Louisiana, (act of 1850) .....						543, 339. 13
Michigan .....						7, 273, 724. 72
Arkansas .....						8, 652, 432. 93
Florida .....						11, 790, 637. 46
Wisconsin .....					132, 413. 09	4, 333, 082. 67
Iowa .....						2, 583, 509. 72
California .....	63, 185. 26	39, 904. 38	58, 358. 33	45, 012. 19	175, 901. 89	1, 158, 626. 80
Oregon .....						
Minnesota .....			8, 048. 18		258, 160. 02	1, 129, 774. 01
Total .....	63, 185. 26	39, 904. 38	66, 406. 51	45, 012. 19	566, 475. 09	61, 071, 356. 03

No. 6.—*Statement exhibiting the quantity of land approved to the several States under the acts of Congress approved March 2, 1849, September 28, 1850, and March 12, 1860, up to and ending September 30, 1871.*

States.	4th quarter, 1870.	1st quarter, 1871.	2d quarter, 1871.	3d quarter, 1871.	Year ending June 30, 1871.	Total since date of grant.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Ohio .....						25, 640. 71
Indiana .....						1, 263, 733. 28
Illinois .....	80. 00	2, 271. 75		40. 00	2, 451. 75	1, 491, 611. 76
Missouri .....		80. 00		544. 95	80. 00	4, 332, 561. 21
Alabama .....						400, 434. 78
Mississippi .....						3, 068, 642. 31
Louisiana, (act of 1849) .....		218. 76	815. 32	2, 730. 83	1, 034. 58	8, 196, 070. 55
Louisiana, (act of 1850) .....		867. 66	163. 71		1, 031. 37	238, 980. 46
Michigan .....			80. 00		80. 00	5, 691, 958. 66
Arkansas .....				100, 803. 99	167. 32	7, 388, 031. 82
Florida .....						10, 901, 007. 76
Wisconsin .....			84, 716. 53		84, 716. 53	3, 114, 455. 08
Iowa .....	11, 882. 71	1, 880. 00			14, 132. 09	881, 757. 13
California .....	63, 185. 26	39, 904. 38	58, 358. 33	45, 012. 19	175, 901. 89	1, 014, 315. 12
Oregon .....						
Minnesota .....			149, 001. 48	8, 008. 09	149, 001. 48	926, 380. 72
Total .....	75, 147. 97	45, 222. 55	293, 135. 37	157, 140. 05	428, 597. 01	48, 935, 581. 35



No. 7.—Statement exhibiting the quantity of land patented to the several States under the acts of Congress approved September 28, 1850, and March 12, 1860, and also the quantity certified to Louisiana under act approved March 2, 1849.

States.	4th quarter, 1870.	1st quarter, 1871.	2d quarter, 1871.	3d quarter, 1871.	Year ending June 30, 1871.	Total since date of grant.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Ohio .....						25,640.71
Indiana .....						*1,256,488.56
Illinois .....	80.00	80.00			160.00	†1,449,805.85
Missouri .....	2,207.47				2,207.47	3,154,603.78
Alabama .....					199,995.89	392,719.61
Mississippi .....						2,681,383.16
Louisiana, (act of 1849) ..		218.76	815.32	2,730.83	1,034.58	8,196,070.55
Louisiana, (act of 1850) ..			1,031.37		1,031.37	216,533.72
Michigan .....	120.00	40.00			160.00	‡5,836,948.82
Arkansas .....		413,353.59	332,149.81		747,131.07	6,758,488.10
Florida .....						10,644,468.04
Wisconsin .....						§2,973,057.26
Iowa .....	3,093.98	12,960.98			16,374.96	1,145,303.32
California .....	7,670.20	47,300.66			160,615.25	787,900.34
Minnesota .....			40,126.78		40,126.78	757,510.35
Total .....	13,171.65	473,953.99	374,123.28	2,730.83	1,168,837.37	46,276,912.17

\* 4,880.20 acres of this contained in indemnity patents under act of March 2, 1855.

† 1,108.83 acres of this contained in indemnity patents under act of March 2, 1855.

‡ 18,823.93 acres of this contained in indemnity patents under act of March 2, 1855.

§ 39,910.75 acres of this contained in indemnity patents under act of March 2, 1855.

|| 320,908.23 acres of this contained in indemnity patents under act of March 2, 1855.

No. 8.—Statement showing the condition of the State selections under the act of September 4, 1841, on the 30th day of June, 1871.

States.	Number of acres to which each State was entitled under the eighth section of the act of September 4, 1841.	Number of acres approved up to June 30, 1871.	Number of acres remain- ing to each State, to be selected on the 1st of July, 1871.
Illinois .....	209,085.50	*209,060.05	25.45
Missouri .....	500,000.00	500,000.00	.....
Alabama .....	97,469.17	*97,469.17	.....
Mississippi .....	500,000.00	500,000.00	.....
Louisiana .....	500,000.00	482,166.97	17,833.63
Michigan .....	500,000.00	498,638.54	1,361.46
Arkansas .....	500,000.00	499,880.03	119.97
Florida .....	499,990.00	450,823.82	49,166.18
Iowa .....	500,000.00	500,000.00	.....
Wisconsin .....	500,000.00	499,973.87	26.13
California .....	500,000.00	295,657.32	204,342.68
Kansas .....	500,000.00	495,552.20	4,447.80
Minnesota .....	500,000.00	483,822.09	16,177.40
Oregon .....	500,000.00	431,576.42	68,423.58
Nevada .....	500,000.00	.....	500,000.00
Nebraska .....	500,000.00	391,752.06	108,247.94
Total .....	7,306,544.67	6,336,372.45	970,172.22

\* The States of Illinois and Alabama received grants under prior acts, which, with the quantities here given, make up the quantity of 500,000 acres.

WILLIS DRUMMOND, *Commissioner*.

DEPARTMENT OF THE INTERIOR,  
General Land Office, 1871.

No. 9.—*Condition of bounty-land business under acts of 1847, 1850, 1852, and 1855, showing the issues and locations from the commencement of operations under said acts to June 30, 1871.*

Grade of warrants.	Number issued.	Acres embraced thereby.	Number located.	Acres embraced thereby.	Number outstanding.	Acres embraced thereby.
Act of 1847, 160 acres.....	80,649	12,903,840	78,700	12,592,000	1,949	311,840
40 acres.....	7,533	303,320	7,028	281,120	553	22,200
Total .....	88,232	13,207,160	85,728	12,873,120	2,504	334,040
Act of 1850, 160 acres.....	27,438	4,390,080	26,619	4,259,040	819	131,040
80 acres.....	57,710	4,616,800	55,796	4,463,680	1,914	153,120
40 acres.....	103,971	4,158,840	99,922	3,996,880	4,049	161,960
Total .....	189,119	13,165,720	182,337	12,719,600	6,782	446,120
Act of 1852, 160 acres.....	1,222	195,520	1,189	190,240	33	5,280
80 acres.....	1,698	135,840	1,650	132,000	48	3,840
40 acres.....	9,063	362,520	8,854	354,160	209	8,360
Total .....	11,983	693,880	11,693	676,400	290	17,480
Act of 1855, 160 acres.....	112,734	18,037,440	103,090	16,494,400	9,644	1,543,040
120 acres.....	96,852	11,622,240	88,546	10,625,520	8,306	996,720
100 acres.....	6	600	5	500	1	100
80 acres.....	49,355	3,948,400	46,765	3,741,200	2,590	207,200
60 acres.....	358	21,480	294	17,640	64	3,840
40 acres.....	538	21,520	446	17,840	92	3,680
10 acres.....	5	50	3	30	2	20
Total .....	259,848	33,651,730	239,149	30,897,130	20,699	2,754,600
SUMMARY.						
Act of 1847.....	88,232	13,207,160	85,728	12,873,120	2,504	334,040
1850.....	189,119	13,165,720	182,337	12,719,600	6,782	446,120
1852.....	11,983	693,880	11,693	676,400	290	17,480
1855.....	259,848	33,651,730	239,149	30,897,130	20,699	2,754,600
Total .....	549,182	60,718,490	518,907	57,166,250	30,275	3,552,240

WILLIS DRUMMOND, *Commissioner.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, October 4, 1871.*

No. 10.—*Agricultural selections within certain States, and also scrip locations under agricultural and mechanic act of July 2, 1862, and supplements of April 14, 1864, and July 23, 1866.*

Land districts.	Quantity selected in place for the fiscal year ending June 30, 1871.	Quantity located for the fiscal year ending June 30, 1871.	Land districts.	Quantity selected in place for the fiscal year ending June 30, 1871.	Quantity located for the fiscal year ending June 30, 1871.
MISSOURI.	<i>Acres.</i>	<i>Acres.</i>	NEVADA.	<i>Acres.</i>	<i>Acres.</i>
Boonville .....		560.00	Carson City .....		2,080.00
Ironton .....	22,763.58	1,280.00	Aurora .....		3,040.00
Springfield .....	52,032.84	160.00	Total .....		5,120.00
Total .....	74,796.42	2,000.00	WISCONSIN.		
IOWA.			Falls of St. Croix .....		160.00
Sioux City .....		20,460.76	La Crosse .....		80.00
MINNESOTA.			Bayfield .....		320.00
Taylor's Falls .....		3,958.49	Eau Claire .....		1,120.00
St. Cloud .....		13,589.11	Total .....		1,680.00
Jackson .....		6,400.00	WASHINGTON TERRITORY.		
New Ulm .....		7,582.11	Olympia .....		18,344.34
Du Luth .....		9,118.63	Vancouver .....		957.34
Alexandria .....		21,161.71	Total .....		19,301.68
Total .....		61,811.05	COLORADO TERRITORY.		
NEBRASKA.			Denver City .....		29,032.11
West Point .....		4,154.95	Pueblo .....		8,397.33
Beatrice .....		1,595.68	Central City .....		4,486.53
Lincoln .....		8,947.32	Total .....		41,915.97
Dakota City .....		1,278.28	DAKOTA TERRITORY.		
Grand Island .....		4,383.03	Vermillion .....		33,635.35
Total .....		20,359.26	Springfield .....		2,879.20
KANSAS.			Pembina .....		320.00
Topeka .....		4,320.00	Total .....		36,834.55
Salina .....		3,720.00	MONTANA TERRITORY.		
Humboldt .....		2,500.94	Helena .....		14,424.11
Angusta .....		783.45	UTAH TERRITORY.		
Concordia .....		22,164.05	Salt Lake City .....		18,480.00
Junction City .....		33,036.63	RECAPITULATION.		
Total .....		70,525.07	Missouri .....	74,796.42	2,000.00
OREGON.			Iowa .....		20,460.76
Roseburgh .....		12,796.65	Minnesota .....		61,811.05
Le Grand .....		2,080.00	Kansas .....		70,525.07
Total .....		14,876.65	Nebraska .....		20,359.26
CALIFORNIA.			Oregon .....		14,876.65
San Francisco .....	16,458.85	61,965.69	California .....	34,004.56	158,897.88
Marysville .....	640.00	19,301.90	Michigan .....		7,760.00
Humboldt .....	14,665.71	8,320.00	Nevada .....		5,120.00
Stockton .....	1,280.00	19,359.17	Wisconsin .....		1,680.00
Visalia .....	960.00	9,275.57	Washington Territory .....		19,301.68
Sacramento .....		29,239.09	Colorado Territory .....		41,915.97
Los Angeles .....		3,517.14	Dakota Territory .....		36,834.55
Shasta .....		7,919.32	Montana Territory .....		14,424.11
Total .....	34,004.56	158,897.88	Utah Territory .....		18,480.00
MICHIGAN.			Total .....	108,800.98	494,446.98
Marquette .....		7,760.00			



No. 11.—*Statement exhibiting land concessions by acts of Congress to States for canal purposes, from the year 1827 to June 30, 1871.*

States.	Date of laws.	Statutes.	Page.	Name of canal.	Total number of acres granted.
Indiana .....	Mar. 2, 1827	4	236	} Wabash and Erie Canal.....	1, 439, 279
Do. ....	Feb. 27, 1841	5	414		
Do. ....	Mar. 3, 1845	5	731		
Ohio .....	Mar. 2, 1827	4	236	} Wabash and Erie Canal.....	266, 535
Do. ....	June 30, 1834	4	716		
Do. ....	May 24, 1828	4	305		
Do (sec. 5) ..	May 24, 1828	4	306	Miami and Dayton Canal .....	333, 826
Illinois.....	Mar. 2, 1827	4	234	General canal purposes.....	500, 000
				Canal to connect the waters of the Illinois River with those of Lake Michigan.	290, 915
Wisconsin .....	June 18, 1838	5	245	Milwaukee and Rock River Canal.....	125, 431
Do. ....	April 10, 1866	14	39	Breakwater and harbor and ship-canal...	200, 000
Michigan .....	Aug. 26, 1852	10	35	St. Mary's ship-canal.....	750, 000
Do. ....	Mar. 3, 1865	13	519	Portage Lake and Lake Superior ship-canal.	200, 000
Do. ....	July 3, 1866	14	81	Portage Lake and Lake Superior ship-canal.	200, 000
Do. ....	July 3, 1866	14	80	Ship canal to connect the waters of Lake Superior with the lake known as Lac La Belle.	100, 000

#### RECAPITULATION.

Indiana .....	1, 439, 279
Ohio .....	1, 100, 361
Illinois .....	290, 915
Wisconsin.....	325, 431
Michigan .....	1, 250, 000
Total quantity of acres granted.....	4, 405, 986

WILLIS DRUMMOND, *Commissioner.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, 1871.*

THE GENERAL LAND OFFICE.

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States.	Date of laws.	Statutes.	Page.	Name of road.	Mile-limits.	Number of acres certified for the year ending June 30, 1870.	Number of acres certified for the year ending June 30, 1871.	Estimated quantities having under the grants.
Illinois .....	Sept. 20, 1850	9	466	Illinois Central.....	6 and 15	2,535,053.00	2,535,053.00	2,535,053.00
Do.....	Sept. 20, 1850	9	466	Mobile and Chicago.....	6 and 15	*737,130.29	.....	*1,004,640.00
Mississippi .....	Sept. 20, 1850	9	466	Mobile and Ohio River.....	6 and 15	171,550.00	.....	404,800.00
Do.....	Aug. 11, 1856	11	20	Vicksburg and Meridian.....	6 and 15	.....	.....	1652,800.00
Do.....	Aug. 11, 1856	11	30	Gulf and Ship Island.....	6 and 15	.....	.....	*230,400.00
Alabama .....	Sept. 20, 1850	9	466	Mobile and Ohio River.....	6 and 15	*119,523.44	.....	413,520.00
Do.....	Sept. 20, 1850	11	15	Alabama and Florida.....	6 and 15	1394,522.99	.....	481,920.00
Do.....	May 17, 1856	11	17	Selma, Rome and Dalton.....	6 and 15	440,700.16	.....	132,480.00
Do.....	June 3, 1856	11	17	Coosa and Tennessee.....	6 and 15	167,784.96	.....	840,880.00
Do.....	June 3, 1856	11	17	Mobile and Girard.....	6 and 15	1504,145.86	.....	150,000.00
Do.....	June 3, 1856	11	17	Coosa and Chattanooga.....	6 and 15	.....	.....	576,000.00
Do.....	June 3, 1856	11	18	South and North Alabama.....	6 and 15	.....	.....	897,920.00
Do.....	Mar. 3, 1857	11	200	Alabama and Chattanooga.....	6 and 15	461,456.09	.....	442,542.14
Do.....	Mar. 3, 1871	16	580	Florida Railroad and Branch.....	6 and 15	281,984.17	.....	165,688.00
Florida .....	Apr. 10, 1869	16	455	Florida and Alabama.....	6 and 15	165,688.00	.....	1,568,729.87
Do.....	May 17, 1856	11	15	Pensacola and Georgia.....	6 and 15	11,253,212.93	.....	183,133.99
Do.....	May 17, 1856	11	15	Florida, Atlantic and Gulf Central.....	6 and 15	137,863.29	.....	610,880.00
Do.....	May 17, 1856	11	15	Vicksburg and Shreveport.....	6 and 15	333,211.70	.....	967,840.00
Louisiana .....	June 3, 1856	11	18	New Orleans, Opelousas and Great Western.....	6 and 15	719,193.75	.....	1,000,000.00
Do.....	June 3, 1856	11	18	An act declaring forfeited to the United States certain lands granted to the State of Louisiana to aid in constructing a railroad therein.	20	.....	.....	1,100,000.00
Do.....	July 14, 1870	16	277	New Orleans, Baton Rouge and Vicksburg.....	6 and 15	1,115,408.41	.....	1,100,000.00
Do.....	Mar. 3, 1871	16	573	Cairo and Fulton.....	Additional.	5	.....	966,722.00
Arkansas .....	Feb. 9, 1853	10	155	Cairo and Fulton.....	6 and 15	.....	.....	438,646.80
Do.....	July 23, 1866	14	328	Resolution extending time of completion of first twenty miles.	6 and 15	127,238.51	.....	367,532.00
Do.....	May 6, 1870	16	376	Memphis and Little Rock.....	Additional.	5	.....	.....
Do.....	Feb. 9, 1853	10	155	Memphis and Little Rock.....	6 and 15	.....	.....	.....
Do.....	July 25, 1866	14	338	Memphis and Little Rock.....	Additional.	5	.....	.....

\* In the adjustment of this grant, the road was treated as an entirety and without reference to the State line; hence Alabama has proved to her more and Mississippi less land than they would appear to be entitled to in proportion to the length of road line in the respective States.

† Grants that have expired according to the limitations of the statute; the lands have not, however, been restored to the mass of public lands, Congress having taken no action to that end.

No. 12.—Statement exhibiting land concessions by acts of Congress to States and corporations, &amp;c.—Continued.

States.	Date of laws.	Statutes.	Page.	Name of road.	Mile-limits.		Number of acres certified for the year ending June 30, 1870.	Number of acres certified for the year ending June 30, 1871.	Estimated quantities having un-der the grants.
Arkansas	Feb. 9, 1853	10	155	Little Rock and Fort Smith	6 and 15 Additional.	5	550, 520.18	112, 836.37	550, 525.34
Do.	July 28, 1866	14	338	Little Rock and Fort Smith					458, 771.00
Do.	Apr. 10, 1869	16	46	An act to extend the time for completion of first twenty miles.					
Do.	Mar. 8, 1870	16	76	An act repealing act of April 10, 1869	10 and 20 6 and 15 6 and 15				864, 000.00
Do.	July 4, 1866	14	83	Iron Mountain Railroad					781, 944.83
Missouri	June 10, 1852	10	8	Hannibal and St. Joseph					1, 161, 255.07
Do.	June 10, 1852	10	8	Pacific and Southwestern Branch	6 and 15 Additional.	5	1, 158, 073.54		219, 262.31
Do.	Feb. 9, 1853	10	155	Cairo and Fulton			63, 540.11		182, 718.00
Do.	July 28, 1866	14	338	Cairo and Fulton					1, 400, 000.00
Do.	July 4, 1866	14	83	St. Louis and Iron Mountain	6 and 15 6 and 20		291, 725.00		948, 643.66
Iowa	May 15, 1856	11	9	Burlington and Missouri River			95, 656.46		101, 110.67
Do.	June 2, 1864	13	95	Burlington and Missouri River					
Do.	Feb. 10, 1866	14	349	Resolution extending time for completion of road.	6 and 15 6 and 20		482, 134.36	120.00	1, 144, 904.90
Do.	May 15, 1856	11	9	Chicago, Rock Island and Pacific			143, 869.71	16, 023.39	116, 236.70
Do.	June 2, 1864	13	95	Chicago, Rock Island and Pacific			778, 809.17		1, 298, 739.00
Do.	May 15, 1856	11	9	Cedar Rapids and Missouri River	6 and 15 6 and 15		342, 406.68		1, 226, 163.05
Do.	June 2, 1864	13	95	Cedar Rapids and Missouri River					
Do.	May 15, 1856	11	9	Iowa Falls and Sioux City			1, 226, 163.89		
Do.	June 2, 1864	13	98	Authorizes Dubuque and Sioux City Railroad to change line of route from Fort Dodge to Sioux City.	10 and 20 10 and 20				1, 536, 000.00
Do.	Mar. 2, 1868	15	38	Time of completion of Dubuque and Sioux City Railroad extended to January 1, 1872.					256, 000.00
Do.	May 12, 1864	13	72	McGregor and Missouri River				133, 274.53	580, 000.00
Do.	May 12, 1864	13	72	Sioux City and St. Paul	6 and 15 6 and 15				312, 384.32
Do.	July 2, 1864	13	363	Sioux City and Pacific					353, 430.19
Michigan	June 3, 1856	11	21	Port Huron and Milwaukee					1, 052, 469.19
Do.	June 3, 1856	11	21	Detroit and Milwaukee	6 and 15 6 and 15		6, 428.68		
Do.	June 3, 1856	11	21	Jackson, Lansing and Saginaw			30, 998.75		
Do.	July 3, 1866	14	78	Time of completion extended seven years			721, 469.25	21, 356.99	
Do.	June 3, 1856	11	425	Time extended for completion of first twenty miles	6 and 15				
Do.	July 3, 1866	14	425	An act authorizing change of northern terminus of road from Traverse Bay to the Straits of Mackinaw, and for other purposes.					
Do.	Mar. 2, 1867	16	586	Flint and Pere Marquette					
Do.	June 3, 1856	11	21	Flint and Pere Marquette	6 and 15		511, 425.90	126.47	586, 838.73
Do.	Feb. 17, 1865	13	569	An act extending time for completion of road.					
Do.	July 3, 1866	14	78	An act to change the western terminus of road.					
Do.	Mar. 3, 1871	16	582	An act extending time for completion of road five years.					



Do.....	June 3, 1856	11	21	Grand Rapids and Indiana.....	6 and 15	620, 182.32	620, 182.32	620, 182.32
Do.....	June 7, 1864	13	119	Grand Rapids and Indiana from Fort Wayne to Grand Rapids.....	6 and 20	191, 637.11	12, 433.04	531, 200.50
Do.....	June 3, 1856	11	21	Bay de Noquet and Marquette.....	6 and 15	218, 861.10		218, 860.87
Do.....	Mar. 3, 1865	13	521	Bay de Noquet and Marquette.....	200		52, 437.17	128, 000.00
Do.....	June 3, 1856	11	21	Marquette and Ontonagon.....	6 and 15	216, 919.19		{ 309, 315.24
Do.....	Mar. 3, 1865	13	521	Marquette and Ontonagon.....	Additional	49, 086.45		{ 243, 200.00
Do.....	Apr. 20, 1871	13	3	An act to enable the Houghton and Ontonagon Railroad Company to make a resurvey of its road.				
Do.....	May 20, 1868	15	252	Resolution concerning certain lands granted to railroads in Michigan and Wisconsin.....	6 and 15		110, 700.72	375, 650.00
Do (J. R.).....	July 5, 1862	12	620	Chicago and Northwestern.....	Additional	5		188, 800.00
Do.....	Mar. 3, 1865	13	521	Chicago and Northwestern.....	6 and 15			894, 307.81
Do.....	June 3, 1866	11	21	West Wisconsin.....	6 and 15	324, 943.38		675, 000.00
Do.....	May 5, 1864	13	66	West Wisconsin.....	10 and 20	163, 263.69		*324, 714.95
Do.....	June 3, 1856	11	21	St. Croix and Lake Superior.....	6 and 15	524, 718.15		*350, 000.00
Do.....	May 5, 1864	13	66	St. Croix and Lake Superior.....	10 and 20			*318, 737.74
Do.....	June 3, 1856	11	21	Branch to Bayfield.....	6 and 15	318, 740.80		*215, 000.00
Do.....	May 5, 1864	13	66	Branch to Bayfield.....	10 and 20			600, 000.00
Do.....	June 3, 1856	11	21	Chicago and Northwestern.....	6 and 15	311, 307.72		750, 000.00
Do (J. R.).....	Apr. 25, 1862	12	618	Authorizes change of line of route.....	10 and 20			650, 000.00
Do.....	June 3, 1866	13	66	Portage, Winnebago and Superior.....	6 and 15	468, 566.14		500, 000.00
Do.....	May 5, 1864	13	361	Resolution explanatory of, and in addition to, the act of May 5, 1864.....	10 and 20		9, 884.04	750, 000.00
Do.....	Mar. 3, 1857	11	195	St. Paul and Pacific.....	6 and 15		86, 763.17	725, 000.00
Do.....	Mar. 3, 1865	13	526	St. Paul and Pacific.....	10 and 20			
Do.....	Mar. 3, 1857	11	195	Branch St. Paul and Pacific.....	6 and 15	438, 075.38		
Do.....	Mar. 3, 1865	13	526	Branch St. Paul and Pacific.....	10 and 20			
Do.....	July 12, 1862	12	624	Resolution authorizing the State to change the line of certain branch railroads and for other purposes.				
Do.....	Mar. 3, 1871	16	588	An act authorizing the St. Paul and Pacific Railroad Company to change its line in consideration of a relinquishment of lands.				
Do.....	Mar. 3, 1857	11	195	Minnesota Central.....	6 and 15	174, 578.91	3, 029.88	353, 403.00
Do.....	Mar. 3, 1865	13	526	Minnesota Central.....	10 and 20			290, 000.00
Do.....	Mar. 3, 1857	11	195	Winona and St. Peter.....	6 and 15	342, 376.51	330.00	730, 000.00
Do.....	Mar. 3, 1865	13	526	Winona and St. Peter.....	10 and 20		214, 007.88	690, 000.00
Do.....	Mar. 3, 1857	11	195	St. Paul and Sioux City.....	6 and 15			830, 000.00
Do.....	May 12, 1864	13	74	St. Paul and Sioux City.....	10 and 20	442, 733.83	369, 610.04	150, 000.00
Do.....	July 13, 1866	14	97	Time extended for completion of road seven years.				
Do.....	July 13, 1866	14	97	Lake Superior and Mississippi.....	10 and 20			800, 000.00
Do.....	July 13, 1866	14	93	Authorized to make up deficiency within thirty miles of the west line of said road.				
Do.....	July 4, 1866	14	87	Minnesota Southern.....	10 and 20	125, 480.94		735, 000.00
Do.....	July 4, 1866	14	87	Hastings and Dakota River.....	10 and 20			350, 000.00
Do.....	Mar. 3, 1863	12	772	Leavenworth, Lawrence and Calveston.....	10 and 20			800, 000.00
Do.....	July 1, 1864	13	339	Atchison, Topeka and Santa Fe.....	10 and 20			1, 500, 000.00
Do.....	July 1, 1864	13	339	Union Pacific Southern Branch.....	10 and 20			500, 000.00
Do.....	July 23, 1866	14	210	St. Joseph and Denver City.....	10 and 20			1, 700, 000.00

\* Grants that have expired according to the limitations of the statute; the lands have not, however, been restored to the mass of public lands, Congress having taken no action to that end.

No. 12.—Statement exhibiting land concessions by acts of Congress to States and corporations, &amp;c.—Continued.

States.	Date of laws.	Statutes.	Page.	Name of road.	Mile-limits.		Number of acres certified under the grants up to June 30, 1870.	Number of acres certified for the year ending June 30, 1871.	Estimated quantities inuring under the grants.
Kansas .....	July 25, 1866	14	236	Kansas and Neosho Valley, now known as Missouri River, Fort Scott and Gulf Railroad.	10 and 20	.....	.....	.....	17,000.00
Do.....	July 26, 1866	14	229	Southern Branch of the Union Pacific Railroad from Fort Riley, Kansas, to Fort Smith, Arkansas.	10 and 20	.....	.....	.....	1,503,000.00
California.....	July 13, 1866	14	94	Placerville and Sacramento Valley.....	10 and 20	.....	.....	.....	200,000.00
Do.....	July 25, 1866	14	239	Oregon Branch of the Central Pacific.....	10 and 20	.....	.....	.....	1,540,000.00
Do.....	Apr. 10, 1869	16	47	An act to amend the sixth section of the original act	10 and 20	.....	.....	.....	320,000.00
Do.....	Mar. 2, 1867	14	548	Stockton and Copperopolis.....	10 and 20	.....	.....	.....	1,650,000.00
Oregon .....	July 25, 1866	14	239	Oregon and California.....	10 and 20	.....	.....	.....	.....
Do.....	June 25, 1868	15	80	An act to amend an act granting lands to road from the Central Pacific Railroad, California, to Portland, Oregon.	20 and 25	.....	.....	.....	.....
Do.....	Apr. 10, 1869	16	47	An act to amend the sixth section of the original act of July 25, 1866	20 and 25	.....	.....	.....	.....
Do.....	May 4, 1870	16	94	Oregon Central.....	20 and 25	.....	.....	.....	.....
Corporations .....	July 1, 1862	12	489	Union Pacific, with branch from Omaha, Nebraska, from Missouri River to Pacific Ocean.	20	.....	.....	.....	.....
Do. (Res.) .....	Mar. 3, 1869	15	348	Name of Union Pacific Railroad, E. D., changed to Kansas Pacific Railway Company.	20	.....	.....	.....	.....
Do.....	July 2, 1864	13	356	Central Pacific, from a point near Ogden, in Utah, to San José, California.	20	.....	.....	.....	.....
Do.....	July 3, 1866	14	79	Union Pacific Railway Company, eastern division, to designate general route of road, &c., before December 1, 1866.	20	.....	.....	.....	.....
Do.....	July 26, 1866	14	367	Granting Union Pacific Railroad Company right of way through military reserves.	20	.....	.....	.....	.....
Do.....	May 21, 1866	14	356	Extending the time for the construction of the first section of the Western Pacific Railroad.	20	.....	.....	.....	.....
Do. (Res.) .....	Apr. 10, 1869	16	56	For the protection of the interests of the United States in the Union Pacific and Central Pacific Railroad Companies, and for other purposes.	20 and 40	.....	.....	.....	.....
Do.....	May 6, 1870	16	421	An act to fix point of junction of Union Pacific and Central Pacific Railroad Companies.	20 and 40	.....	.....	.....	.....
Do.....	July 2, 1864	13	365	Northern Pacific Railroad from Superior to Paget Sound.	20 and 40	.....	.....	.....	.....
Do.....	May 31, 1870	16	378	Resolution authorizing Northern Pacific Railroad Company to issue its bonds, &c.	20 and 40	.....	.....	.....	.....
Do. (Res.) .....	May 7, 1866	14	355	Resolution extending the time for commencing and completing said road two years.	20 and 40	.....	.....	.....	.....
Do.....	July 27, 1866	14	292	Atlantic and Pacific, from Springfield, Missouri, to the Pacific.	20 and 40	.....	.....	.....	.....

Corporations.	Mar. 3, 1871	16	573	Southern Pacific	20 and 30	-----	-----	-----	3,000,000.00
Do.	July 1, 1862	12	489	Central Branch Union Pacific	10 and 20	-----	-----	-----	245,166.60
Do.	July 2, 1864	13	356	Texas Pacific Railroad	20 and 40	-----	-----	-----	13,400,000.00
Do.	Mar. 3, 1871	16	573	An act to authorize the Burlington and Missouri River Railroad to change the established line of road in Nebraska.					
Do.	May 6, 1870	16	118						
<i>Wagon-roads.</i>									
Wisconsin.	Mar. 3, 1863	12	797	From Fort Wilkins, Copper Harbor, Michigan, to Fort Howard, Green Bay, Wisconsin.	3 and 15	-----	153,565.74	112,092.91	302,630.96
Do.	June 8, 1863	15	67	Time extended for completion of road to March 1, 1870.					
Michigan.	Mar. 3, 1863	12	797	From Fort Wilkins, Copper Harbor, Michigan, to Fort Howard, Green Bay, Wisconsin.	3 and 15	-----	-----	47,953.85	221,013.27
Do.	June 8, 1863	15	67	Time extended for completion of road to March 1, 1870.					
Do.	May 6, 1870	16	121	Time extended for completion of road to January 1, 1872.	6	-----	-----	-----	1,497,600.00
Do.	June 20, 1864	13	140	From Saganaw City, Michigan, to the Straits of Mackinaw.					
Do.	June 20, 1864	13	140	From Grand Rapids to the Straits of Mackinaw.					
Do.	July 2, 1864	13	335	From Eugene City by way of Middle Fork of Willamette River, to the eastern boundary of the State.	3 and 6	-----	19,153.73	191,109.23	720,000.00
Oregon.	Dec. 26, 1856	14	374	An act amendatory of the original act, making provision for indemnity lands.					
Do.	Mar. 3, 1869	15	338	Time extended for completion of road to July 2, 1872.	3	-----	36,623.01	-----	76,800.00
Do.	July 4, 1866	14	86	From Corvallis to the Aquina Bay.					
Do.	July 5, 1866	14	89	From Albany by way of Canyon City to the eastern boundary of the State.	3	-----	-----	46,814.45	460,000.00
Do.	July 15, 1871	16	363	An act amendatory of the original act.					
Do.	Feb. 25, 1867	14	409	From Dalles City on the Columbia River to Fort Boise on the Snake River.	3 and 10	-----	-----	-----	556,800.00
Do.	Mar. 3, 1869	15	340	From the navigable waters of Coos Bay to Roseburg.	3 and 6	-----	-----	-----	75,000.00



## RECAPITULATION.

States.	Estimated number of acres granted for wagon-roads.	Number of acres certified and patented under the grants.	Estimated number of acres inuring under the grants.
Illinois .....		2, 595, 053. 00	2, 595, 053. 00
Mississippi .....		908, 680. 29	2, 062, 240. 00
Alabama .....		2, 288, 138. 50	3, 729, 120. 00
Florida .....		1, 760, 468. 39	2, 360, 114. 00
Louisiana .....		1, 072, 405. 45	3, 178, 720. 00
Arkansas .....		1, 793, 167. 10	4, 804, 871. 14
Missouri .....		1, 820, 645. 30	3, 745, 160. 21
Iowa .....		3, 510, 243. 19	7, 207, 837. 98
Michigan .....		2, 851, 034. 19	4, 931, 361. 16
Wisconsin .....		1, 642, 973. 74	4, 328, 360. 50
Minnesota .....		2, 602, 833. 13	7, 723, 403. 00
Kansas .....			5, 420, 000. 00
California .....			2, 060, 000. 00
Oregon .....		152, 834. 67	2, 860, 000. 00
Corporations: Pacific railroads .....		22, 998, 476. 95	57, 066, 240. 99
		1, 686, 442. 13	140, 645, 166. 00
Wagon-roads: Wisconsin .....	302, 930. 96	24, 684, 919. 08	197, 711, 406. 99
Michigan .....	1, 718, 613. 27	265, 604. 65	
Oregon .....	1, 888, 600. 00	47, 958. 85	
		293, 705. 42	3, 910, 144. 23
Total .....		25, 292, 188. 00	201, 621, 551. 22

DEPARTMENT OF THE INTERIOR,  
General Land Office, 1871.

WILLIS DRUMMOND, *Commissioner*.

No. 13.—*Estimates of appropriations required for the service of the fiscal year ending June 30, 1873, by the General Land Office.*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
<b>SALARIES.</b>			
Commissioner General Land Office, act of July 4, 1836, (Stat. L., vol. 5, p. 111, sec. 10.)	\$3,000 00		
Chief clerk, act of March 3, 1853, (Stat. L., vol. 111, p. 211, sec. 3).	2,000 00		
Recorder, act of July 4, 1836, (Stat. L., vol. 5, p. 111, sec. 4;) act of March 3, 1837, (Stat. L., vol. 5, p. 164, sec. 1.)	2,000 00		
Three principal clerks, of public lands, of private land claims, and surveys, at \$1,800 each, act of July 4, 1836, (Stat. L., vol. 5, p. 109, sec. 2; Stat. L., vol. 5, pp. 109, 111, secs. 2, 3.)	5,400 00		
Three clerks of class 4, act of March 3, 1853, (Stat. L., vol. 10, p. 211, sec. 3.)	5,400 00		
Twenty-three clerks of class 3, act of March 3, 1853, (Stat. L., vol. 10, p. 211, sec. 3;) act of April 22, 1854, (Stat. L., vol. 10, p. 276, sec. 1.)	36,800 00		
Forty clerks of class 2, (same acts).....	56,000 00		
Forty clerks of class 1, (same acts).....	48,000 00		
Draughtsman at \$1,600, and assistant draughtsman at \$1,400, act of July 4, 1836, (Stat. L., vol. 5, p. 112, sec. 10;) act of April 22, 1854, (Stat. L., vol. 10, p. 276, sec. 1.)	3,000 00		
Two messengers at \$840 each, and three assistant messengers at \$720 each, act of July 4, 1836, (Stat. L., vol. 5, p. 112, sec. 10;) act of August 18, 1856, (Stat. L., vol. 11, p. 145, sec. 1;) act of March 3, 1859, (Stat. L., vol. 15, p. 257, sec. 1;) act of July 12, 1870, (Stat. L., vol. 16, p. 243, sec. 1.)	3,840 00		
Two packers, at \$720 each, act of July 4, 1836, (Stat. L., vol. 5, p. 112, sec. 10;) act of March 3, 1859, (Stat. L., vol. 15, p. 257, sec. 1.)	1,440 00		
Seven laborers, at \$720 each, act of August 18, 1856, (Stat. L., vol. 11, p. 145, sec. 1;) act of March 3, 1859, (Stat. L., vol. 15, p. 257, sec. 1;) act of July 12, 1870, (Stat. L., vol. 16, p. 250, sec. 3.)	5,040 00	\$171,920 00	\$171,920 00
<i>Additional clerks on account of military bounty-lands.</i>			
One principal clerk as director, act of March 3, 1853, (Stat. L., vol. 10, p. 664, sec. 1.)	2,000 00		
One clerk of class 3, (same act) .....	1,600 00		
Four clerks of class 2, (same act) .....	5,600 00		
Thirty-five clerks of class 1, act of March 3, 1853, (Stat. L., vol. 10, p. 664, sec. 1;) act of July 12, 1870, (Stat. L., vol. 16, p. 243, sec. 1.)	42,000 00		
Two laborers, at \$720 each, act of August 18, 1856, vol. 11, p. 145, sec. 1;) act of March 3, 1859, (Stat. L., vol. 15, p. 257, sec. 1;) act of July 12, 1870, (Stat. L., vol. 16, p. 250, sec. 3.)	1,440 00	52,640 00	52,640 00
<i>Provided, That the Secretary of the Interior, at his discretion, shall be, and he is hereby, authorized to use any portion of said appropriation for piece-work, or by the day, week, month, or year, at such rate or rates as he may deem just and fair, not exceeding a salary of \$1,200 per annum.</i>			
Compensation of President's secretary to sign patents for public lands, act of July 4, 1836, (Stat. L., vol. 5, p. 111, sec. 6.)	1,500 00	1,500 00	1,500 00
<b>CONTINGENT EXPENSES.</b>			
Cash system, diagrams, stationary, furniture, and repairs of the same; miscellaneous items, including two of the city newspapers, to be filed, bound, and preserved for the use of the office; advertising and telegraphing; miscellaneous items on account of bounty lands and military lands and military patents under the several acts, and contingent expenses under the swamp-land act of September 28, 1850. (See note.)	\$30,000 00	.....	\$20,000 00
Translation of the abridged report of the Commissioner of the General Land Office into foreign languages.	1,500 00	31,500 00	1,500 00
<b>NOTE.</b> —The sum of \$20,000 appropriated for these purposes for the year ending June 30, 1872, is insufficient to meet the demands upon this fund. The sum of \$30,000 is therefore submitted as the lowest amount which will be required to meet the incidental expenses of this office.			

No. 14.—*Estimates of appropriations required for the service of the fiscal year ending June 30, 1873, by the General Land Office.*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
COLLECTING REVENUE FROM SALES OF PUBLIC LANDS.			
Salaries and commissions of register and receivers. (See detail herewith. See note 1.)	.....	\$397, 200 00	\$391, 200 00
Incidental expenses of the several land offices. (See detail herewith. See note 2.)	.....	40, 175 00	39, 275 00
Expense of depositing public moneys. ....	\$10, 000 00	10, 000 00	10, 000 00
NOTE 1.—This estimate is for a larger amount than that appropriated for the fiscal year ending June 30, 1872, owing to the opening of an additional land office.			
NOTE 2.—This estimate is for a larger amount than that appropriated for the fiscal year ending June 30, 1872, owing to the opening of an additional office, and the great amount of business transacted at others.			

WILLIS DRUMMOND, *Commissioner.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, October 2, 1871.*

*Detailed estimate of amount required for salaries and commissions of registers and receivers, and incidental expenses of the several land offices during the fiscal year ending June 30, 1873.*

State.	Land office.	Salaries and commissions.	Incidental expenses.	Total.
Alabama.....	Huntsville.....	\$6, 000	\$400	\$18, 700
	Montgomery.....	6, 000	900	
	Mobile.....	5, 000	400	
Arizona.....	Prescott.....	3, 000	400	3, 400
Arkansas.....	Dardanelle.....	6, 000	500	
	Harrison.....	6, 000	500	26, 100
	Little Rock.....	6, 000	600	
	Camden.....	6, 000	500	
California.....	San Francisco.....	6, 000	900	59, 300
	Sacramento.....	5, 000	500	
	Marysville.....	6, 000	900	
	Humboldt.....	6, 000	900	
	Susanville.....	6, 000	900	
	Stockton.....	6, 000	900	
	Los Angeles.....	5, 000	500	
	Visalia.....	6, 000	900	
	Shasta.....	6, 000	900	
Ohio.....	Chillicothe.....	2, 000	350	2, 350
Indiana.....	Indianapolis.....	1, 500	300	1, 800
Missouri.....	Boonville.....	6, 000	500	
	Ironton.....	6, 000	500	19, 500
	Springfield.....	6, 000	500	
Mississippi.....	Jackson.....	6, 000	600	6, 600
Louisiana.....	New Orleans.....	6, 000	600	
	Natchitoches.....	4, 000	500	11, 100
Michigan.....	Detroit.....	5, 000	600	
	East Saginaw.....	6, 000	500	30, 300
	Ionia.....	5, 000	400	
	Marquette.....	6, 000	400	
	Traverse City.....	6, 000	400	
Florida.....	Tallahassee.....	6, 000	500	6, 500
Iowa.....	Fort Des Moines.....	4, 000	600	
	Council Bluffs.....	4, 000	400	21, 800
	Fort Dodge.....	6, 000	400	
	Sioux City.....	6, 000	400	



*Amount required for salaries and commissions of registers and receivers, &c.—Continued.*

State.	Land office.	Salaries and commissions.	Incidental expenses.	Total.
Nevada .....	Carson City .....	\$4,000	\$400 }	13,700
	Austin .....	4,000	400 }	
	Belmont .....	2,000	600 }	
Washington .....	Aurora .....	2,000	300 }	20,700
	Olympia .....	6,000	900 }	
	Vancouver .....	6,600	900 }	
Oregon .....	Walla Walla .....	6,000	900 }	18,200
	Oregon City .....	6,000	900 }	
	Roseburgh .....	6,000	900 }	
Colorado .....	Le Grand .....	4,000	400 }	19,400
	Pueblo .....	3,000	1,000 }	
	Central City .....	4,000	400 }	
	Denver City .....	6,000	500 }	1,725
Illinois .....	Fair Play .....	4,000	500 }	
	Springfield .....	1,200	525 }	
Idaho .....	Boise City .....	3,000	300 }	5,500
	Lewiston .....	2,000	200 }	
Wyoming .....	Cheyenne .....	3,000	300 }	
Wisconsin .....	Menasha .....	3,000	200 }	25,700
	Falls St. Croix .....	4,000	300 }	
	Stevens's Point .....	4,000	300 }	
	La Crosse .....	4,000	300 }	36,300
	Bayfield .....	3,000	200 }	
	Eau Claire .....	6,000	400 }	
Minnesota .....	Taylor's Falls .....	4,000	300 }	27,800
	St. Cloud .....	6,000	400 }	
	Alexandria .....	4,000	300 }	
	Jackson .....	6,000	400 }	13,400
	New Ulm .....	6,000	400 }	
	Litchfield .....	5,000	300 }	
Dakota .....	Du Luth .....	3,000	200 }	20,100
	Springfield .....	4,000	300 }	
	Vermillion .....	6,000	400 }	
Kansas .....	Pembina .....	2,500	200 }	29,400
	Topeka .....	5,000	600 }	
	Salina .....	6,000	400 }	
	Independence .....	4,000	300 }	27,800
	Concordia .....	6,000	400 }	
	Augusta .....	6,000	400 }	
Nebraska .....	West Point .....	4,050	300 }	5,400
	Beatrice .....	6,000	400 }	
	Lincoln .....	6,000	400 }	
	Dakota City .....	4,000	300 }	6,400
	Grand Island .....	6,000	400 }	
Montana .....	Helena .....	5,000	400 }	
Utah .....	Salt Lake City .....	6,000	400 }	3,300
New Mexico .....	Santa Fé .....	3,000	300 }	
		397,200	40,125	437,325

WILLIS DRUMMOND, *Commissioner.*

DEPARTMENT OF THE INTERIOR,  
GENERAL LAND OFFICE, *October 2, 1871.*

No. 15.—*Estimates of appropriations required for the service of the fiscal year ending June 30, 1873, by the General Land Office.*

Detailed object of expenditure.	Estimates by surveyors general.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
PUBLIC LANDS.				
<i>Office of surveyor general of Louisiana.*</i>				
Salaries:				
Surveyor general, per act March 3, 1831, (4 Stat., p. 493, sec. 5.)	\$2,000	\$2,000		
Clerks in his office, per act May 9, 1836, (5 Stat., p. 26, sec. 1.)	6,200	6,200	\$8,200	\$4,500
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act March 3, 1831, (4 Stat., p. 493, sec. 4.)	3,000	2,500	2,500	2,500
<i>Office of surveyor general of Florida.†</i>				
Salaries:				
Surveyor general, per act March 3, 1823, (3 Stat., p. 755, sec. 7.)	2,000	2,000		
Clerks in his office, per act May 9, 1836, (5 Stat., p. 26, sec. 1.)	5,200	5,200	7,200	4,500
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act May 9, 1836, (5 Stat., p. 26, sec. 1.)	1,500	1,500	1,500	1,500
<i>Office of surveyor general of Minnesota.‡</i>				
Salaries:				
Surveyor general, per acts May 18, 1796, and March 3, 1857, (1 Stat., p. 468, sec. 10; 11 Stat., p. 212, sec. 1.)	2,000	2,000		
Clerks in his office, per act May 9, 1836, and March 3, 1857, (5 Stat., p. 26, sec. 1; 11 Stat., p. 212, sec. 1.)	14,900	10,000	12,000	17,500
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act May 9, 1836, (5 Stat., p. 26, sec. 1.)	3,000	3,000	3,000	2,200
<i>Office of surveyor general of Dakota.§</i>				
Salaries:				
Surveyor general, per act March 2, 1861, (12 Stat., p. 244, sec. 17.)	2,000	2,000		
Clerks in his office, per act March 2, 1861, (12 Stat., p. 244, sec. 17.)	6,300	6,300	8,300	8,300
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act March 2, 1861, (12 Stat., p. 244, sec. 17.)	2,000	2,000	2,000	2,000
<i>Office of surveyor general of Kansas.  </i>				
Salaries:				
Surveyor general, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	2,000	2,000		
Clerks in his office, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	7,500	7,500	9,500	8,300
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	2,000	2,000	2,000	2,000

No. 15.—*Estimates of appropriations required by the General Land Office, &c.*—Continued.

Detailed objects of expenditure, and explanations.	Estimate by surveyor general.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
<i>Office of surveyor general of Colorado. ¶</i>				
Salaries:				
Surveyor general, per act February 23, 1861, (12 Stat., p. 176, sec. 17.)	\$3,000	\$3,000		
Clerks in his office, per act February 23, 1861, (12 Stat., p. 176, sec. 17.)	6,300	6,300	\$9,300	\$7,000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act February 23, 1861, (12 Stat., p. 176, sec. 17.)	2,000	2,000	2,000	2,000
<i>Office of surveyor general of New Mexico. ¶</i>				
Surveyor general, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	3,000	3,000		
Clerks in his office, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	12,900	6,300	9,300	7,000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 22, 1854, (10 Stat., p. 309, sec. 10.)	2,000	2,000	2,000	2,000
<i>Office of surveyor general of California. **</i>				
Salaries:				
Surveyor general, per act May 30, 1862, (12 Stat., p. 410, sec. 9.)	3,000	3,000		
Clerks in his office, per act March 3, 1853, (10 Stat., p. 245, sec. 2.)	21,200	20,000	23,000	16,600
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act March 3, 1853, (10 Stat., p. 245, sec. 2.)	7,000	7,000	7,000	7,000
<i>Office of surveyor general of Idaho. †</i>				
Salaries:				
Surveyor general, per act June 29, 1866, (14 Stat., p. 77, sec. 1.)	3,000	3,000		
Clerks in his office, per act June 29, 1866, (14 Stat., p. 77, sec. 1.)	4,000	4,000	7,000	7,000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act June 29, 1866, (14 Stat., p. 77, sec. 1.)	3,000	2,500	2,500	2,500
<i>Office of surveyor general of Nevada. ††</i>				
Salaries:				
Surveyor general, per act July 4, 1866, (14 Stat., p. 86, sec. 4.)	3,000	3,000		
Clerks in his office, per act July 4, 1866, (14 Stat., p. 86, sec. 4.)	6,300	6,300	9,300	7,000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 4, 1866, (14 Stat., p. 86, sec. 4.)	4,200	3,700	3,700	3,700
<i>Office of surveyor general of Oregon. §§</i>				
Salaries:				
Surveyor general, per act May 30, 1862, (12 Stat., p. 410, sec. 9.)	2,500	2,500		
Clerks in his office, per act September 27, 1850, (9 Stat., p. 496, sec. 2.)	5,400	5,400	7,900	6,500
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act September 27, 1850, (9 Stat., p. 496, sec. 2.)	2,000	2,000	2,000	2,000



No. 15.—*Estimates of appropriations required by the General Land Office, &c.*—Continued.

Detailed objects of expenditure, and explanations.	Estimates by surveyors general.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
<i>Office of surveyor general of Washington.</i> §§				
Salaries:				
Surveyor general, per acts July 17, 1854, and May 30, 1862, (10 Stat., p. 306, sec. 7; 12 Stat., p. 410, sec. 9.)	£2, 500	£2, 500		
Clerks in his office, per act March 3, 1855, (10 Stat., p. 674, sec. 26.)	7, 200	7, 200	£9, 700	£6, 500
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 17, 1854, (10 Stat., p. 306, sec. 7.)	2, 000	2, 000	2, 000	2, 000
<i>Office of surveyor general of Nebraska and Iowa.</i> §§§				
Salaries:				
Surveyor general, per acts July 17, 1854, and May 30, 1862, (10 Stat., p. 306, sec. 7; 12 Stat., p. 410, sec. 9.)	2, 000	2, 000	2, 000	2, 000
Clerks in his office, per acts July 17, 1854, and May 30, 1862, (10 Stat., p. 306, sec. 7; 12 Stat., p. 410, sec. 9.)	8, 700	6, 300	8, 300	8, 300
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per acts June 12, 1838, and March 2, 1867, (5 Stat., p. 243; 14 Stat., p. 448, sec. 1.)	3, 000	2, 000		
<i>Office of surveyor general of Montana.</i> §§				
Salaries:				
Surveyor general, per act March 2, 1867, (14 Stat., p. 542, sec. 1.)	3, 000	3, 000		
Clerks in his office, per act March 2, 1867, (14 Stat., p. 542, sec. 1.)	6, 000	6, 000	9, 000	7, 000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act March 2, 1867, (14 Stat., p. 542, sec. 1.)	3, 000	3, 000	3, 000	2, 000
<i>Office of surveyor general of Utah.</i> §§				
Salaries:				
Surveyor general, per act July 16, 1868, (15 Stat., p. 91, sec. 1.)	3, 000	3, 000		
Clerks in his office, per act July 16, 1868, (15 Stat., p. 91, sec. 1.)	4, 700	4, 700	7, 700	7, 000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 16, 1868, (15 Stat., p. 91, sec. 1.)	2, 000	2, 000	2, 000	1, 800
<i>Office of surveyor general of Wyoming.</i> §§				
Salaries:				
Surveyor general, per acts February 5, 1870, and February 23, 1861, (16 Stat., p. 65, sec. 2; 12 Stat., p. 176, sec. 17.)	3, 000	3, 000		
Clerks in his office, per acts February 5, 1870, and February 23, 1861, (16 Stat., p. 65, sec. 2; 12 Stat., p. 176, sec. 17.)	6, 000	6, 000	9, 000	7, 000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per acts February 5, 1870, and February 23, 1861, (16 Stat., p. 65, sec. 2; 12 Stat., p. 176, sec. 17.)	2, 500	2, 500	2, 500	2, 500

No. 15.—*Estimates of appropriations required by the General Land Office, &c.*—Continued.

Detailed objects of expenditure, and explanation.	Estimates by surveyors general.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
<i>Office of surveyor general of Arizona.**</i>				
Salaries:				
Surveyor general, per act July 11, 1870, (16 Stat., p. 230.)	\$3,000	\$3,000		
Clerks in his office, per act July 11, 1870, (16 Stat., p. 230.)	4,000	4,000	\$7,000	\$6,000
Contingent expenses:				
Rent of office for surveyor general, fuel, books, stationery, and other incidental expenses, per act July 11, 1870, (16 Stat., p. 230.)	2,500	2,500	2,500	3,000
MAP OF THE UNITED STATES AND TERRITORIES.††				
Constructing the connected map of the public land States and Territories, and procuring an engraved copper-plate thereof, to be perfected by adding from year to year the further surveys that may be made, per act January 6, 1863, (12 Stat., p. 822.)	-----	-----	3,000	
<i>Office of recorder of land titles in Missouri.†††</i>				
Salary:				
Recorder of land titles in Missouri, per act March 2, 1865, (2 Stat., p. 326, sec. 3.)	-----	-----	500	
Total.....	-----	-----	209,400	

## EXPLANATION OF THE FOREGOING ESTIMATES.

\* The organic act of this surveying district provides \$2,500 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service, involving restoration of surveying archives destroyed during the late war.

† The organic act of this surveying district provides \$3,500 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service.

‡ The organic act of this surveying district provides \$6,300 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimate is submitted as absolutely required for the service, consequent on rapid progress of the Northern Pacific Railroad calling for more extensive surveying operations in the field and office.

§ The organic act of this surveying district provides \$1,000 for contingent expenses. This amount being inadequate, the present estimate is submitted as absolutely required for the service.

|| The organic act of this surveying district provides \$6,300 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimates are submitted as being absolutely required for the service.

¶ The organic act of this surveying district provides \$4,000 for clerk hire and \$1,000 for contingent expenses. These amounts are inadequate and the present estimates are submitted as absolutely required for the service.

\*\* The organic act of this surveying district provides \$11,000 per annum for clerk hire, and for incidental expenses not exceeding \$10,000. The intricate business under numerous laws of Congress requiring much greater amount of appropriation for clerks in the surveyor general's office than several past appropriations within the maximum of \$11,000 afforded, arrears in the preparation of the description notes of surveys for the local land offices took place to an extent calling for increased appropriation, and to bring up such arrears accumulated during eight years past, this estimate of \$20,000 is actually necessary.

†† The organic act of this surveying district provides \$1,000 for contingent expenses. This amount being inadequate, the present estimate is submitted as absolutely required for the service.

††† The organic act of this surveying district provides \$4,000 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service.

§§ The organic act of these surveying districts provides \$4,000 for clerk hire and \$1,000 for contingent expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service.

|||| The organic act of this surveying district provides \$6,300 for clerk hire, and \$1,000 for contingent

expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service.

¶¶ The organic act of this surveying district provides \$4,000 for clerk-hire and \$1,000 for incidental expenses. These amounts being inadequate, the present estimates are submitted as absolutely required for the service.

\*\*\* The organic act of this surveying district provides \$1,000 for contingent expenses. This amount being inadequate, the present estimate is submitted as absolutely required for the service.

¶¶¶ The map prepared in 1862, and the engraved plates thereof, authorized by joint resolution of January 6, 1863, having proved by subsequent actual surveys during nine years to be imperfect, and not susceptible of being corrected, and, besides, the map not embracing the Territory of Alaska, acquired by subsequent treaty, this estimate is submitted in order to secure a correct map of the public domain, greatly needed for Government purposes.

¶¶¶ No appropriation having been made for the recorder's compensation for the year ending June 30, 1872, a deficiency estimate will be submitted for that purpose.

WILLIS DRUMMOND,  
*Commissioner.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, October 2, 1871.*



No. 16.—*Estimates of appropriations required for the service of the fiscal year ending June 30, 1873, by the General Land Office.*

Detailed objects of expenditure, and explanations.	Estimates by surveyors general.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.
SURVEYING THE PUBLIC LANDS.				
In Louisiana:				
1. At rates not exceeding \$10 per lineal mile for township, and \$8 for section lines, (appropriated, 16 Stat., p. 501.)	\$21,240	.....	\$21,240	\$12,240
In Florida:				
2. At rates not exceeding \$10 per lineal mile for standard, \$7 for township, and \$6 for section lines, (appropriated, 16 Stat., p. 501.)	21,000	.....	21,000	12,500
In Minnesota:				
3. At rates not exceeding \$14 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 501.)	86,464	.....	75,000	40,000
In Dakota:				
4. At rates not exceeding \$10 per lineal mile for standard, \$7 for township, and \$6 for section lines, (appropriated, 16 Stat., p. 501.)	100,000	.....	60,000	20,000
In Montana:				
5. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 501.)	77,000	.....	50,000	40,000
In Nebraska:				
6. At rates not exceeding \$10 per lineal mile for standard, \$7 for township, and \$16 for section lines, (appropriated, 16 Stat., p. 501.)	83,304	.....	60,000	40,000
In Kansas:				
7. At rates not exceeding \$10 per lineal mile for standard, \$7 for township, and \$6 for section lines, (appropriated, 16 Stat., p. 500.)	93,720	.....	70,000	40,060
In Colorado:				
8. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	90,900	.....	50,000	70,000
In Idaho:				
9. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	45,810	.....	40,000	30,000
In New Mexico:				
10. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	66,978	.....	40,000	10,000
In California:				
11. At rates not exceeding \$18 per lineal mile for standard, \$15 for township, and \$12 for section lines, (appropriated, 16 Stat., p. 502.)	100,000	.....	70,000	70,000
In Oregon:				
12. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	87,948	.....	70,000	50,000
In Washington:				
13. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, and for heavy timber lands lying west of the Cascade Mountains at augmented rates, at not exceeding \$20 per lineal mile for standard lines, \$18 for township, and \$15 for section lines, (appropriated, 16 Stat., p. 502.)	83,988	.....	70,000	40,000
In Utah:				
14. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$20 for section lines, (appropriated, 16 Stat., p. 502.)	16,000	.....	16,000	15,000
In Nevada:				
15. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	54,500	.....	50,000	45,000

No. 16.—*Estimates of appropriations required for the service, &c.*—Continued.

Detailed objects of expenditure, and explanations.	Estimates by surveyors general.			
	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1872.	
In Wyoming:				
16. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	\$50,000	.....	\$50,000	\$40,000
In Arizona:				
17. At rates not exceeding \$15 per lineal mile for standard, \$12 for township, and \$10 for section lines, (appropriated, 16 Stat., p. 502.)	30,000	.....	25,000	20,000
For survey of eastern boundary of California:				
18. At rates not exceeding \$50 per lineal mile for that part of the boundary north of the initial point in Lake Bigler, an estimated distance of 210 miles.	.....	\$10,500	.....	
And \$75 per mile for that part included between said initial point and the Colorado River, an estimated distance of 410 miles.	.....	30,750	41,250	
For survey of northern boundary of Nevada:				
19. At a rate not exceeding \$50 per lineal mile, for an estimated distance of 310 miles.	.....		15,500	
For survey of so much of the western boundary of Wyoming as lies between the 41st and 42d parallels of north latitude:				
20. At a rate not exceeding \$40 per lineal mile, 70 miles estimated distance.	.....		2,800	
For survey of southern boundary of Wyoming:				
21. At a rate not exceeding \$60 per lineal mile, estimated length, 370 miles.	.....		22,200	
For survey of western boundary of Kansas:				
22. At a rate not exceeding \$40 per lineal mile, for 210 miles, estimated distance.	.....		8,400	
For survey of so much of the south boundary of Colorado as lies between the 25th and 26th meridians west of Washington:				
23. At a rate not exceeding \$40 per lineal mile, estimated length, 60 miles.	.....		2,400	
For survey of so much of the eastern boundary of New Mexico as lies between the Texas boundary and the 37th parallel of north latitude:				
24. At a rate not exceeding \$40 per lineal mile, for an estimated distance of 35 miles.	.....		1,400	

## EXPLANATION OF THE FOREGOING ESTIMATES.

1. \$21,240 is estimated for the sub-divisional surveys in the southeastern, southwestern, and north-western districts, the township lines having been heretofore extended over those parts of the State.

2. \$21,000 is estimated for the survey of section lines; also township and standard lines in the southern peninsula, surrounding the Okeechobie Lake, and adjoining the Caloosahatchee River.

3. \$75,000 is estimated for the surveys along several railroad routes already in a state of completion, and others to be in operation by the time the appropriation will be available; also for the survey of pine lands, for which there exists considerable demand.

4. \$60,000 is estimated for the extension of the lines of public surveys between the Red River of the North and the Missouri River, along the Northern Pacific Railroad route; also in the valley of the Red River of the North, in order to enable the company to avail themselves of the sections granted by Congress, and falling within the limits granted.

5. \$50,000 is estimated for the extension of public surveys over the region to be traversed by the Northern Pacific Railroad, and such other portions of the Territory as are or will be settled at the time the appropriation will become available; also in mineral localities, in order to enable mining claimants to have their claims connected with the nearest corners of public surveys.

6. \$60,000 is estimated for the survey of public lands within the limits of the Union Pacific Railroad already built, and for several years in operation, so that the company may select the sections granted in aid of the construction of the road; also for the subdivision of such townships as have been settled, in order to accommodate the demands of settlers.

7. \$70,000 is estimated for the continuation of the public surveys in Kansas, situated in the southwestern and western parts of the State, and along the several railroad routes, some already completed,

and others in progress of completion; also in localities where actual settlements have been made requiring the subdivisinal surveys.

8. \$50,000 is estimated for the extension of the lines of public surveys in the eastern part of the Territory, along the railroad grants of land made by Congress in aid of the construction of the Union Pacific, Kansas Pacific, and Denver Pacific Railroads, and in the mineral districts of the Territory; also in such other localities as are requiring surveyed lands for the accommodation of actual settlers.

9. \$40,000 is estimated for the surveys of the public lands in the northern and southeastern portions of the Territory, where actual settlements or mining operations are carried on; also along the proposed Northern Pacific Railroad route.

10. \$40,000 is estimated for the extension of the lines of public surveys east of the Rio Grande del Norte, along the projected railroad route near the thirty-second parallel of north latitude; also for the surveys in mineral regions of the Territory, to enable miners to have their claims connected with the nearest corners of the public surveys.

11. \$70,000 is estimated for the survey of public lands over finally confirmed claims, where no survey is requested to be made within ten months from July 23, 1866; also for the extension of the lines of the public surveys over mineral portions of the State and within the limits of the several railroad grants traversing the State, some of which have already been completed and are awaiting surveys in order to enable the companies to select the quarter sections.

12. \$70,000 is estimated for the extension of the public surveys on the Columbia River, along the Northern Pacific Railroad, and on the belt of country falling within the grants to other railroads and wagon roads; also in the regions already settled by pre-emptors awaiting the surveys to enable them to file proofs of their settlement and cultivation.

13. \$70,000 is estimated for the survey of the public lands in the eastern part of the Territory, along the Northern Pacific Railroad, and in other localities where settlements have been made; also in the regions lying west of the Cascade, covered by dense forests, in order to protect the timber from spoliation.

14. \$16,000 is estimated for continuing the surveys of the public lands within the limits of the Union Pacific Railroad, already completed, and for the extension of the lines of public surveys to the mineral localities and other parts of the Territory where settlements exist.

15. \$50,000 is estimated for the extension of the lines of public surveys along the Union Pacific Railroad, to enable the company to select the granted sections, and in the southern and western portions of the State particularly adapted for stock-raising; also in the mineral regions of the State, and such other parts thereof already settled by enterprising communities awaiting the surveys.

16. \$50,000 is estimated for the extension of the lines of public surveys over the agricultural, grazing, and mineral lands, and within the land grant to the Union Pacific Railroad Company, whose road has already been completed, and who are awaiting the surveys so that granted sections can be made available; also for the survey of localities where actual settlements exist.

17. \$25,000 is estimated for the continuation of the surveys of public lands in the Territory south of Gila River, in the vicinity of Arizona City; along Colorado River, near Fort Mohave, where several hundreds of farmers are reported to have made settlements; in the eastern part of the Territory, where the line of the Atlantic and Pacific Railroads will intersect the eastern boundary.

18. A portion of this boundary was surveyed in 1863, under the joint action of California and Nevada. The progress of public surveys north of Lake Bigler has developed data which leads this office to suppose that there are serious inaccuracies in the survey of this line. As to the portion southeast of Lake Bigler, which was surveyed to the 103d mile from the lake, it was not considered by the astronomer himself as definitely established. (For a more detailed statement see Annual Report, under head "Eastern Boundary of California.")

24. These surveys are necessary in order that the inhabitants of the respective jurisdictions, of which the boundaries enumerated are the legal limits, may know to which their rights of citizenship pertain; that the public surveys may be closed upon an established line, thus securing the stability of titles subsequently acquired through the sale of public lands, and for various purposes connected with the economy and convenience in the public surveys.

WILLIS DRUMMOND,  
*Commissioner.*

DEPARTMENT OF THE INTERIOR,  
*General Land Office, October 2, 1871.*

22 L O



No. 17.—*Statement of confirmed Indian pueblo grants and private land claims in New Mexico.*

## PUEBLO GRANTS.

Designation.	Name.	Confirinee.	Under act of—	Area in acres.
A	Jemez .....	Indians of the pueblo .....	Dec. 22, 1858, 11 Stat., p. 374.	17, 510. 45
B	Acoma.....	do .....	do .....	Not surveyed.
C	San Juan .....	do .....	do .....	17, 544. 77
D	Picuris .....	do .....	do .....	17, 460. 69
E	San Felipe .....	do .....	do .....	34, 766. 86
F	Pecos .....	do .....	do .....	18, 763. 33
G	Cochiti .....	do .....	do .....	24, 256. 50
H	Santo Domingo .....	do .....	do .....	74, 743. 11
I	Taos .....	do .....	do .....	17, 360. 55
K	Santa Clara .....	do .....	do .....	17, 368. 52
L	Tesuque .....	do .....	do .....	17, 471. 12
M	San Ildefonso .....	do .....	do .....	17, 292. 64
N	Pojoaque .....	do .....	do .....	13, 520. 38
O	Zia .....	do .....	do .....	17, 514. 63
P	Sandia .....	do .....	do .....	24, 187. 29
Q	Isleta .....	do .....	do .....	110, 080. 31
R	Uambe .....	do .....	do .....	13, 586. 33
	Laguna* .....	do .....	June 21, 1860	Not surveyed.

\* Confirmed by 3d section act of 21st June, 1860, 12 Stat., p. 71, in connection with private claim No. 30.

## No. 17.—Statement of confirmed Indian land claims in New Mexico, &amp;c.—Continued.

## PRIVATE LAND CLAIMS.

Designation.	Name.	Confirinee.	Under act of—	Area in acres
1	San Juan Bautista del Ojito del Rio de las Gallinas.	Preston Beck, jr .....	June 21, 1860	318, 699. 72
2	Town of Tomé.....	Inhabitants of the town.....	Dec. 22, 1858	121, 594. 53
3	Tierra Amarilla.....	Francisco Martinez <i>et al</i> .....	June 21, 1860	Not surveyed.
3*	Town of Casa Colorado.	Inhabitants of the town.....	Dec. 22, 1858	Do.
6	Brazito .....	Legal representatives of Juan Antonio Garcia .....	June 21, 1860	Do.
7	Town of Tecolote .....	Inhabitants of the town.....	Dec. 22, 1858	21, 636. 83
8	Las Frigos.....	Legal representatives of Francisco Trajillo, Diego Padilla, and Bartolome Marquez. ....	June 21, 1860	12, 545. 66
9	Junta de las Rios .....	John Scully, Guillermo Smith, Gregorio Trajillo, Augustin Duran, Santiago Giddings, and Francisco Romero. ....	June 21, 1860	Not surveyed.
10	Nuestra Señora de la Luz.	John Lamy, bishop of New Mexico.....	June 21, 1860	16, 546. 85
11	Town of Chilili .....	Inhabitants of the town.....	Dec. 22, 1858	38, 435. 14
12	Agua Negra .....	Antonio Sandoval.....	June 21, 1860	Not surveyed.
13	Town of Belen.....	Inhabitants of the town.....	Dec. 22, 1858	194, 663. 75
14	San Pedro .....	José Serafin Ramirez .....	June 21, 1860	35, 911. 63
15	.....	Charles Beaubien and Guadalupe Miranda .....	June 21, 1860	Not surveyed.
16	.....	José Leandro Perea.....	June 21, 1860	Do.
18	Cañon de Pecos.....	Legal representatives of Juan Estevan and legal representatives of Francisco Ortiz, jr., and Juan de Aguilar. ....	.....	Do.
16†	Rancho of the pueblo of San Cristoval.	E. W. Eaton, assignee and legal representative of Domingo Fernandez and others. ....	June 21, 1860	27, 854. 06
20	Town of Las Vegas .....	Inhabitants of the town.....	June 21, 1860	496, 446. 96
†	Location No. 1.....	Heirs of Luis Maria Cabeza de Baca, in lieu of "Las Vegas Grandes." .....	June 21, 1860	Not surveyed.
+	Location No. 2.....	.....do.....	June 21, 1860	99, 289. 39
21	Town of Tajique.....	Inhabitants of the town.....	June 21, 1860	Not surveyed.
22	Town of Torreon.....	.....do.....	June 21, 1860	Do.
23	Town of Manzano.....	.....do.....	June 21, 1860	Do.
24	San Isidro .....	Legal representatives of Antonio Armenta and Salvador Sandoval. ....	June 21, 1860	Do.
25	Town of Cañon de San Diego.	Inhabitants of the town.....	June 21, 1860	Do.
27	Town of Las Trampas.....	.....do.....	June 21, 1860	Do.
28	.....	Legal representatives of Sebastian Martin.....	June 21, 1860	Do.
29	Town of Anton Chico.	Inhabitants of the town.....	June 21, 1860	389, 662. 72
30	Rancho of Pagnate, rancho of El Rito, Gigante Cañon, and rancho of San Juan and Santa Ana.	Indians of the pueblo of Laguna .....	June 21, 1860	Not surveyed.
31	.....	Legal representatives of Vicente Duran y Arrijo. ....	June 21, 1860	Do.
32	Town of Mora .....	Inhabitants of the town.....	June 21, 1860	827, 621. 01
33	Valverde and Fray Cristoval.	Heirs of Pedro Armendarces.....	June 21, 1860	Not surveyed.
34	.....	.....do.....	June 21, 1860	Do.
35	Bosque del Apache .....	Antonio Sandoval.....	June 21, 1860	Do.
36	Town of Chamito .....	Inhabitants of the town.....	June 21, 1860	Do.
37	Town of Tejon.....	.....do.....	June 21, 1860	Do.
38	.....	Legal representatives of Pedro Sanchez.....	June 21, 1860	Do.
43	Ortiz mine .....	Elisha Whittlesey, Abraham Rencher, Ferdinand W. Risque, Nathaniel M. Miller, Joseph F. Walker's representatives, Charles E. Sherman, and Andrew J. O'Bannon. ....	Mar. 1, 1861	69, 458. 33
70	Cañon del Agua.....	José Serafin Ramirez .....	June 12, 1866	3, 501. 21

\* The claim of Casa Colorado is numbered 29 in the act of confirmation, but in the corrected list of private claims (see letter of surveyor general of January 12, 1858) is numbered as above.

† The claim of E. W. Eaton is numbered 16 in the act of confirmation, but should have been numbered 19. It seems to have been accidentally omitted in the corrected list.

‡ The heirs of Luis Maria Cabeza de Baca, by the act of June 21, 1860, were granted, in lieu of "Las Vegas Grandes," which they claimed, the same amount of land contained in the Las Vegas town grant, to be located by them in square bodies, not exceeding five in number. The heirs of Baca have located said grant in five square bodies, viz: Nos. 1 and 2 in New Mexico, Nos. 3 and 5 in Arizona, and No. 4 in Colorado.

WILLIS DRUMMOND,  
Commissioner.

No. 18.—Statement showing the area of the several States and Territories containing public the quantity of land which remained unsold and unap

No. 1.	No. 2.		No. 3.	No. 4.	No. 5.
States and Territories containing public lands.	Area of States and Territories containing public lands.		Quantity sold.	Entered under the homestead law of May 20, 1862, and its supplements of 1864 and 1866.	Granted for military services.
	<i>Square miles.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Ohio .....	39,964.00	25,576,960.00	12,805,911.82	6,247.94	1,817,425.99
Indiana .....	33,800.00	21,637,760.00	16,124,044.78	120.00	1,311,956.65
Illinois .....	55,410.00	35,462,400.00	19,879,541.00	272.03	9,533,653.00
Missouri .....	63,350.00	41,824,000.00	22,785,494.77	1,784,672.49	6,812,402.89
Alabama .....	50,722.00	32,462,080.00	17,789,351.45	754,082.89	1,158,771.17
Mississippi .....	47,156.00	30,179,840.00	12,201,037.03	372,104.31	384,697.73
Louisiana .....	41,346.00	26,461,440.00	5,720,353.28	292,418.80	1,156,482.50
Michigan .....	56,451.00	36,128,640.00	12,545,769.43	1,637,781.77	3,932,946.78
Arkansas .....	52,198.00	33,406,720.00	8,235,726.57	1,231,684.31	2,258,146.92
Florida .....	59,268.00	37,931,520.00	1,832,431.49	389,147.10	465,742.04
Iowa .....	55,045.00	35,228,800.00	11,966,419.59	900,292.43	14,096,905.77
Wisconsin .....	53,924.00	34,511,360.00	10,361,957.03	1,224,726.62	6,342,702.82
California .....	188,981.00	120,947,840.00	3,592,816.77	709,386.65	511,052.00
Minnesota .....	83,531.00	53,450,840.00	2,568,688.66	3,632,740.05	5,950,379.00
Oregon .....	95,274.00	60,975,360.00	386,572.37	552,447.95	67,629.14
Kansas .....	81,318.00	52,043,520.00	655,940.35	2,855,398.05	4,226,545.95
Nevada .....	112,090.00	71,737,600.00	71,863.40	30,601.68	8,220.00
Nebraska .....	75,995.00	48,636,800.00	1,242,501.92	2,585,205.16	1,785,948.05
Washington Territory .....	69,994.00	44,796,160.00	515,451.80	425,353.65	53,913.63
New Mexico Territory .....	121,201.00	77,568,640.00	4,476.56	23,305.60	-----
Utah Territory .....	84,476.37	54,065,043.20	104,653.43	173,020.68	20,160.00
Dakota Territory .....	150,931.45	96,596,128.00	92,243.85	493,648.13	29,560.00
Colorado Territory .....	104,500.00	66,880,000.00	235,541.48	294,655.96	180,160.00
Montana Territory .....	143,776.00	92,016,640.00	32,170.95	89,429.85	480.00
Arizona Territory .....	113,916.00	72,906,240.00	160.00	-----	-----
Idaho Territory .....	86,294.00	55,228,160.00	15,306.68	40,519.28	320.00
Wyoming Territory .....	97,882.92	62,645,068.80	-----	953.31	-----
Indian Territory .....	68,991.00	44,154,240.00	-----	-----	-----
Alaska Territory .....	577,390.00	369,529,600.00	-----	-----	-----
Total .....	2,867,184.74	1,834,998,400.00	161,766,426.46	20,500,216.69	62,115,292.03

Column No. 5 shows the quantity of public land returned as actually located with military bounty-land reserve in Ohio, nor the outstanding warrants not returned as located up to June 30, 1871.

Column No. 6 shows the quantity selected within their own limits, by States containing public lands, under said act to non-public-land-holding States which had been located by the State assignees up to said act be made applicable to all the States.

Column No. 7 shows the quantity actually certified under grants for railroads, and not the whole ferred pursuant to the railroad grants by acts of Congress, with the grants for wagon roads, will be

Column No. 8 shows the quantity embraced in approved swamp selections up to June 30, 1871, approvals. (See swamp table, No. 6.)

Column No. 9 shows the quantity granted for internal improvements under the act of September 4, in prior grants to each State for internal improvements. In the case of Ohio and Indiana the prior received no land under the act of 1841. In the case of Illinois, Iowa, and Wisconsin, the quantities under the acts of 1842 and 1854; the quantity granted to Iowa for the improvement of the Des Moines improvement of the Fox and Wisconsin Rivers, under the act of 1846, and therefore exceed the quantity

Column No. 10 shows the quantity granted for university purposes, and the estimated quantity granted the Indian Territory nor Alaska being included.



lands, the quantity of lands disposed of, by sale or otherwise, in each up to June 30, 1871, and appropriated at that date in the several States and Territories.

No. 6.		No. 7.	No. 8.	No. 9.	No. 10.	
Granted for agricultural colleges—act of July 2, 1862.		Approved under grants in aid of railroads.	Approved swamp selections.	Quantity granted for internal improvements.	Donations and grants for schools and universities.	
Selected in place.	Located with scrip.				Schools.	Universities
<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
.....	.....	.....	25,640.71	1,243,001.77	704,488	69,120
.....	.....	.....	1,263,733.28	1,609,861.61	650,317	46,080
.....	.....	2,595,053.00	1,489,120.01	533,382.73	985,066	46,080
315,045.66	206,499.55	2,190,530.85	4,332,016.26	500,000.00	1,199,139	46,080
.....	.....	2,288,138.50	400,434.78	500,000.00	902,774	46,080
.....	.....	908,660.29	3,068,642.31	500,000.00	837,584	46,080
.....	.....	1,072,405.45	8,432,320.68	500,000.00	780,044	46,080
240,000.00	1,000,392.38	3,053,717.84	5,691,958.66	500,000.00	1,067,397	46,080
.....	.....	1,924,086.08	7,287,227.83	500,000.00	886,460	46,080
.....	.....	1,760,468.39	10,901,007.76	500,000.00	908,503	92,160
240,000.96	226,281.58	3,376,968.66	881,757.13	1,333,079.90	905,144	46,080
240,007.73	1,113,065.07	1,642,973.74	3,114,455.08	1,183,728.42	958,649	92,160
52,213.18	935,335.19	694,684.90	969,302.93	500,000.00	6,719,324	46,080
119,852.17	793,442.48	3,310,679.15	918,372.63	500,000.00	2,969,990	46,080
74,037.54	33,560.75	152,834.67	.....	500,000.00	3,329,706	46,080
90,000.40	679,992.76	417,428.00	.....	500,000.00	2,891,306	46,080
.....	5,120.00	.....	.....	500,000.00	3,985,428	46,080
90,000.00	1,010,755.29	639,024.00	.....	500,000.00	2,702,044	46,080
.....	31,773.34	.....	.....	.....	2,488,675	46,080
.....	.....	.....	.....	.....	4,309,368	46,080
.....	18,480.00	.....	.....	.....	3,003,613	46,080
.....	36,994.55	.....	.....	.....	5,366,451	.....
.....	69,314.30	.....	.....	.....	3,715,555	.....
.....	14,424.11	.....	.....	.....	5,112,035	.....
.....	.....	.....	.....	.....	4,050,350	.....
.....	.....	.....	.....	.....	3,068,231	.....
.....	.....	.....	.....	.....	3,480,281	.....
.....	.....	.....	.....	.....	.....	.....
1,461,157.64	6,175,431.35	26,027,673.52	48,775,990.05	12,403,054.43	67,983,922	1,082,880

land warrants, and does not include the military scrip received as money, the area of the Virginia mill- under the agricultural college act of July 2, 1862, and its supplements; also the quantity of scrip issued June 30, 1871, and not the quantity liable to pass under the act, which would be 9,510,000 acres, should

quantity which will inure under the grants, it being estimated that the aggregate which will be trans- equal to 216,074,990.26 acres. (See table No. 11.)

under the acts of 1849, 1850, and 1860, and not the quantity selected, the latter being in excess of the

1841, and specific grants prior thereto. The act of 1841 granted 500,000 acres, less the quantity embraced grants covered the quantity given in column 9, exceeding 500,000 acres, and therefore those States given in this column include the additional selections by Illinois for the Illinois and Michigan Canal, River, under the acts of 1846 and 1862, and joint resolution of 1861; also the grant to Wisconsin for the of 500,000 acres.

to the States and reserved in the organized Territories, respectively, for the support of schools, neither

## No. 18.—Statement showing the area of the several States

No. 1.	No. 11.	No. 12.	No. 13.	No. 14.	No. 15.
States and Territories containing public land.	Located with Indian scrip.	Located with float scrip under act March 17, 1862.	Estimated quantity granted for wagon roads.	Quantity granted for ship canal.	Salines.
	Acres.	Acres.	Acres.	Acres.	Acres.
Ohio .....					24,216
Indiana .....					23,040
Illinois .....					121,629
Missouri .....		80.00			46,080
Alabama .....	7,913.83				23,040
Mississippi .....	16,402.00				
Louisiana .....	78,563.24				
Michigan .....	720.00	12,896.24	1,718,613	1,250,000	46,080
Arkansas .....	275,972.64				46,080
Florida .....					
Iowa .....	2,200.00	80.00			46,080
Wisconsin .....	22,891.21	1,680.00	250,000	200,000	
California .....	38,425.19	80.00			
Minnesota .....	259,225.29	400.00			46,080
Oregon .....			1,888,600		46,080
Kansas .....	640.00				46,080
Nevada .....	15,156.99				
Nebraska .....	1,760.00	80.00			
Washington Territory .....					
New Mexico Territory .....					
Utah Territory .....	79.82				
Dakota Territory .....	10,210.00				
Colorado Territory .....	2,000.00				
Montana Territory .....					
Arizona Territory .....					
Idaho Territory .....					
Wyoming Territory .....					
Indian Territory .....					
Alaska Territory .....					
Total .....	732,165.21	15,296.24	3,857,213	1,450,000	514,485

Column No. 12 shows the quantity located with scrip issue under the act of March 17, 1862, (12 Stat. La Nana grants, in Louisiana.

Column No. 15, showing the quantity granted for salines, does not include the selections by the State

Column No. 21 shows the quantity embraced in confirmed private land claims, so far as returns of surveys

Column No. 22. To the areas in this column reported as undisposed of, there is to be added the area, entries, warrant locations, &c. The said areas will be added in a subsequent report, there no being

DEPARTMENT OF THE INTERIOR, *General Land Office*, November 1, 1871.

and Territories containing public lands, &c.—Continued.

No. 16.	No. 17.	No. 18.	No. 19.	No. 20.	No. 21.	No. 22.
Seats of government and public buildings.	Granted to individuals and companies.	Granted for deaf and dumb asylums.	Reserved for benefit of Indians.	Reserved for companies, individuals, and corporations.	Confirmed private land claims.	Remaining unsold and unappropriated June 30, 1871.
<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
.....	32, 141. 24	.....	16, 330. 73	8, 805, 976. 00	26, 459. 80	.....
2, 560	843. 44	.....	126, 220. 71	149, 102. 00	329, 880. 53	.....
2, 560	954. 64	.....	41, 754. 59	.....	233, 334. 00	.....
2, 560	.....	.....	22, 587. 61	.....	1, 477, 993. 77	102, 817. 15
1, 620	1, 981. 53	21, 949. 46	2, 542, 378. 82	.....	213, 386. 65	5, 810, 171. 92
1, 280	15, 965. 31	.....	6, 561, 608. 82	.....	688, 083. 25	4, 577, 674. 95
.....	8, 412. 98	.....	.....	.....	2, 075, 426. 29	6, 292, 932. 78
13, 200	4, 080. 00	.....	109, 300. 83	.....	126, 711. 25	3, 130, 994. 82
10, 600	139, 366. 25	2, 097. 43	.....	.....	118, 451. 12	10, 444, 740. 85
6, 240	52, 114. 00	20, 924. 22	227. 49	305. 75	3, 739, 789. 00	17, 262, 459. 76
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6, 400	5, 705. 82	.....	.....	.....	36, 880. 99	7, 713, 376. 47
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25, 600	.....	.....	.....	.....	.....	67, 049, 529. 93
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p. 371,) in satisfaction of claims against the United States for lands sold within the Las Ormigas and of Nebraska under the act of April 19, 1864, (13 Stat., p. 49.) have been received, not embracing claims confirmed and not yet reported as surveyed. of lands which have reverted to the United States by reason of the cancellation of cash and homestead time at present to ascertain them.

WILLIS DRUMMOND, *Commissioner.*













