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THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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March 1, 1928

Number 1

BUREAU OF ENTOMOLOGY
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DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

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INSECT PEST SURVEY BULLETIN

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No. 1

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JANUARY AND FEBRUARY, 1928.

This number of the Survey Bulletin is the first of our eighth volume. We wish to take occasion at this time to acknowledge the very hearty cooperation that we are receiving from our collaborators. The material has steadily increased and improved from year to year, in quantity and quality, and we wish to solicit your continued contributions to this work.

It is with considerable satisfaction that we note the organization of a Survey to cover the Pacific Islands, promoted by the Hawaiian Sugar Planters' Association and the Bishop Museum. Arrangements are being made by which the Insect Pest Survey will be kept in touch with such observations on economic insects as are made incident to this Survey. The project is financed to the amount of \$62,500 and is to function for the next four years. Dr. J. Philpott Mumford will have charge of the field work.

What is probably the most serious development in the pink bollworm situation that has occurred since the introduction of this insect into the United States in 1917 is a new and very extensive outbreak in mid-western Texas. As far as is known, a considerable portion of Ector, Midland, Martin, Andrews, Glasscock, Dawson, and Howard Counties are infested.

An unusually small number of sugarcane borers entered hibernation in 1927.

The abundance of bags of the bagworm on trees and plants readily observable during the winter months indicates that this insect was especially prevalent during 1927 in southwestern Ohio and southern and central Missouri.

The winter Hessian-fly survey in Kansas indicates that large numbers of this insect are still present in the fields. In the Middle Atlantic States more flies have been observed than during the last few years, while throughout the East-Central States moderate infestations are generally reported.

The chinch bug is not reported as present in unusual numbers in hibernation quarters from any part of the chinch-bug belt, and no early spring reports of the green bug have been received.

Throughout the Eastern States aphid eggs in general on deciduous fruit trees are comparatively scarce.

Reports of very high mortality of the San Jose scale have been received from the Eastern and Central States as far south as Georgia.

The Blastophaga that played so important a role in the establishment of the Smyrna fig industry of California is now playing a new role in that region as the vector of a disease known as fig endosepsis.

Many larvae of the pepper weevil were found in February, indicating a low winter mortality in southern California.

During the late fall and early winter the vegetable weevil very seriously damaged the turnip crop in parts of Mississippi and Alabama.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

regon

Don C. Mote (February 20): Assistant County Agent Lawrence of Klamath Falls reports about a thousand acres of grasshopper egg beds in that district and expects a huge grasshopper outbreak this season.

WHITE GRUBS (Phyllophaga sp.)

Missouri

L. Haseman (February 24): Recent diggings in a blue grass sod orchard showed grub worms to be unusually abundant and most of them at a depth of less than 6 inches from the surface. To an area of approximately 4 square feet eight grubs were taken from the first 6 inches of soil, all living, and two within the second 6 inches of soil.

JAPANESE BEETLE (Popillia japonica Newm.)

GENERAL
STATEMENT

Monthly Letter of the Bureau of Entomology, No. 165 (January, 1928): During the winter months three shipments of parasites were received at the Moorestown laboratory. All of these were Tiphia wasps in the cocoon stage, reared from ovipositions obtained on Popillia grubs at the different field laboratories. From Shillong, India, 9,000 cocoons of Tiphia No. 2036, a large percentage of which were affected by fungus, were received in November. From Miho, Japan, 5,000 cocoons of Tiphia No. 1851, in very good condition, and 700 cocoons of Tiphia No. 5, from Suigen, Korea, which were largely attacked by fungus, arrived in December. From Pennin, China, 9,000 cocoons of Tiphia No. 115 arrived in January in very good condition.

CEREAL AND FORAGE CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Pennsylvania

C. C. Hill and H. D. Smith (January 26): Wheat fields sown in the fall of 1927 in the east-central part of the State are heavily infested with the Hessian fly and considerable damage can be looked for in this section. The southeastern and western counties are much more lightly infested.

Maryland

C. C. Hill and H. D. Smith (January 26): The young wheat is heavily infested with the Hessian fly in many of the wheat-growing counties and there are prospects of damage from the fly in the coming year. Only light infestations were found on the eastern shore.

- West Virginia H. D. Smith (January 26): Wheat fields sown in the fall of 1927 in Berkeley and Jefferson Counties are heavily infested with the Hessian fly this year. Parasitism of the fall generation of the fly in these sections is very low, which makes the outlook probable for damaging infestations during the coming season.
- Virginia H. D. Smith (January 26): Many fields of young wheat were found badly damaged by the Hessian fly in the counties of Augusta, Clarke, Frederick, Pulaski, Rockbridge, Rockingham, and Shenandoah. Other counties were less heavily infested.
- North Carolina H. D. Smith (January 26): Recent surveys of the counties of Guilford, Mecklenburg, and Durham showed that fields sown in fall wheat were lightly infested with the Hessian fly with no prospects of serious damage from this source for the coming year.
- Illinois W. P. Flint (February 21): Severe winter killing of wheat has occurred in many of the late-sown fields in east-central and southern Illinois. Early sown fields in these sections appear to be in better condition at the present time, although there are moderate infestations by the Hessian fly in most of these fields.
- Missouri L. Haseman (February 24): No recent observations have been made on the wintering conditions of the Hessian fly but in seeding plats for Hessian fly studies at Columbia it was found from inspection of plants during December that a fair infestation of the fly seems to be again developing in this area.
- Kansas J. W. McColloch (February 23): The Hessian fly promises to be a big problem again this year. Surveys made during the fall and early winter showed a rather heavy infestation throughout central Kansas, extending from Sumner County to Clark County on the south, and reaching northward almost to the Nebraska line. Material which has been collected in the field shows that the winter mortality has been light, and with favorable conditions this insect should cause considerable trouble in May and June.

CHINCH BUG (Blissus leuconterus Say)

- Kansas J. W. McColloch (February 23): The chinch-bug outbreak which has been under way for several years appears to be about over. Excessive rainfall last summer was very detrimental to this insect, and as a result the number of bugs going into hibernation last fall was comparatively light. There has also been a rather heavy mortality of the bugs in hibernation, due to several abrupt drops in temperature following periods of warm weather.

GREEN BUG (Toxoptera graminum Rond.)

Kansas

J. W. McColloch (February 23): We have had no reports of the green bug in the State this winter.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Michigan

C. B. Dibble (February 20): It may be of interest to note that another lot of Microbracon galeschiae Ashm., a native parasite, was bred from corn-borer material collected by myself at Monroe during the summer of 1927. The determination of this species was made by Mr. A. B. Gahan of the United States Bureau of Entomology.

It is also of interest to note that the fungus Sporotrichum globuliferum, as determined by Prof. Pettit, was likewise obtained from the experimental plots at the Michigan State Corn-Borer Station near Monroe.

CLOVER

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

Illinois

J. H. Bigger (February 18): Much damage probable in 1928. Fall conditions favored late brood in central part of State.

CLOVER SEED CHALCID (Bruchophagus funebris Howard)

Illinois

J. H. Bigger (February 18): Fall conditions were favorable in central part of State for late-brood chalcids. It seems likely that there will be considerable damage in 1928.

F R U I T I N S E C T S

GENERAL FEEDERS

APHIDIIDAE

West Virginia

W. E. Rumsey (February 20): Our field man reports aphid eggs generally distributed but not abundant.

Illinois

W. P. Flint (February 21): Only moderate to very small numbers of aphid eggs have been found on apple twigs in the orchards in central Illinois. In many orchards it is practically impossible to find eggs even after several hours' search.

Missouri

L. Haseman (February 24): The abundance of aphid eggs on the twigs of apple and haw seems to vary materially in the different orchards in central Missouri. Some trees are heavily infested, others show only small numbers of eggs.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Ohio E. W. Mendenhall (February 23): I find the eggs of the European red mite on apple trees in the southwestern part of the State quite bad, especially where trees are neglected and not sprayed.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Virginia W. S. Abbott (February 16): Appears to be increasing in this vicinity (Vienna).

Georgia E. Lee Worsham (February 10): It may be of interest to you to know that the cold weather we had in January was responsible for reducing the San Jose scale in the commercial orchards in middle and northern Georgia from 75 to 95 per cent. In the Cornelia district we were unable to find enough scale in any of the orchards for our experimental work.

Ohio E. W. Mendenhall (February 23): I find the farm orchards where there is not much care given badly infested with the San Jose scale. Where periodical sprayings are carried on the scale is held pretty well in check.

Illinois S. C. Chandler (February 21): Examination of unsprayed scale on January 20 showed about 60 per cent of the scale in the overwintering stage to be dead. Some injury to peach trees has resulted from fall applications of dormant spray from both lime sulphur and oil, the injury by the oil being slightly more severe than that caused by lime sulphur.

Missouri L. Haseman (February 24): From recent counts made in connection with some oil-spray tests at Columbia, Mo., it has been found that practically 99 per cent of the scales have been killed by winter conditions combined with parasitism. The records from untreated trees show a little better than 1 per cent living scale.

APPLE

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Missouri L. Haseman (February 24): In southern Missouri during the past season the woolly aphis was unusually abundant and from recent inspection surveys in the Marionville district it is found that overwintering signs of the aphis show promise of a heavy infestation this coming year.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois W. P. Flint (February 12): Examinations of overwintering larvae made by members of the Survey staff in southern, eastern, and westcentral Illinois show that in southern Illinois approximately 20 per cent of the larvae have died during hibernation, while in

central Illinois approximately 50 per cent of the overwintering larvae are dead, the cause of the death being apparently fungus infection.

Missouri

L. Haseman (February 24): Recent collections of apple worms for breeding-cage investigations show that they have been wintering well at Columbia. Comparatively few dead worms appear in the cocoons and up to February 15 small percentages of the worms have been removed by woodpeckers or other birds.

LEAF CRUMPLER (Mineola indigenella Zell.)

Missouri

L. Haseman (February 24): The apple leaf crumpler is more abundant this winter on young fruit trees and wild haws than usual and the pest seems to be wintering safely up to the present time.

PEACH

TILE HORNED PRIONUS (Prionus imbricornis L.)

Mississippi

R. W. Harned (February 15): On January 14, Inspector R. B. Deen sent in two large larvae that were taken from peach trees on the property of James A. Coleman, Tupelo. One of these larvae is still alive in the insectary. The other specimen was sent to Washington and identified by Dr. A. G. Boving as Prionus imbricornis L. The owner of this orchard wrote on January 24, as follows:

"These borers were gotten out of adjoining trees that were 25 feet apart. Both of these trees were in a very rich sandy loam at the foot of the hill in my orchard. I find most of my borers in this part of the orchard and very few in the heavy clay near the top of the hill. These worms came out of especially fine trees which bore fine crops in 1926, but showed signs then of dying. I pruned them very close, but they showed further signs of decay last season. About half of the trees were still alive when I had them dug up, and I feel sure that the worms killed the trees. My attention was attracted to them because of their large size, but more especially instead of boring between the bark and the wood, you will notice from the specimen of the root sent you they bored directly into the wood. These trees were gassed with paradichlorobenzene in October, 1926, and October, 1927, but evidently this had no effect on these borers."

FIGS

BLASTOPHAGA (Blastophaga psenes L.)

California

Monthly News Letter Los Angeles County Horticultural Commission Volume 10, No.1, (January 15): A survey of known plantings of caprifigs in Los Angeles County has recently been completed, according to K. L. Tolf, Deputy Horticultural Commissioner in

Charge of the Survey in that area. The work was carried out as part of a State-wide program of the State Department of Agriculture to wipe out the disease known as fig endosepsis. According to University of California authorities, this disease is transmitted to the Smyrna type figs by the Blastophaga wasp, necessary to the proper pollinization of this species of fig. Under the plan of operation all of the overwintering or mamme crop figs are to be picked and forwarded by the growers to a central point of sterilization before February 15, 1928. The emerged wasps will be returned to the owners in vials to be released to the profichi crop. This latter crop can then be distributed in the commercial orchards in the usual manner.

While the survey showed a very limited number of caprifig trees in the county, their listing and subsequent proper handling is of the utmost importance to the success of the disease-control campaign.

WALNUT

CODLING MOTH (*Carpocapsa pomonella* L.)

California

Monthly News Letter Los Angeles County Horticultural Commission Volume 10, No. 2 (February 15): In several new areas of Los Angeles County walnut growers found it necessary to treat for the codling moth for the first time last season. According to figures compiled by K. L. Wolff, Deputy Horticultural Commissioner of Los Angeles County, growers in these new areas sprayed 724 acres and dusted 89 acres for this pest during 1927. Mr. Wolff further states that control results were comparable to the degree of control obtained in the older infested areas of the county during previous years. Tray counts on index orchards showed the average treated property to have an infestation of 2.8 per cent, while untreated orchards in the same area averaged 7.5 per cent.

CITRUS

APHIDIIDAE

California

Monthly News Letter Los Angeles County Horticultural Commission Volume 10, No. 2 (February 15): Citrus aphids are getting an early start in many parts of the county according to reports of Los Angeles County district horticultural inspectors, and will bear careful watching. They are damaging new growth by their attack almost as soon as the buds break. The attack at present seems to be confined to the south and east or warmer sides of the trees. New fruit wood in many cases is either killed in the initial stage or so weakened that it can not support the normal bloom. Failure to set a crop may often be directly traced to neglect in instituting timely control measures against this pest.

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (February 23): Among the outstanding entomological conditions in Florida this year is the scarcity of the citrus aphid. It does not appear now that they can possibly get abundant enough to do much harm to the first flush of growth and to the bloom. This happy condition of affairs is due entirely to the drought and freezes of the past winter which either inhibited all new growth on citrus or froze it so that the aphids starved to death. This, of course, refers to Aphis spiraeicola.

WHITE FLIES (Aleuridae)

Florida J. R. Watson (February 23): Dialeurodes citri and D. citrifolii have been somewhat more abundant than usual because of the drought which prevented the proper development of the entomogenous fungi. The rainfall for Florida during 1927 averaged about one-third less than normal and the result was a heavy increase of these insects which are usually controlled by the entomogenous fungi.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Virginia Monthly News Letter Los Angeles County Horticultural Commission, Volume 10, No. 1 (January 15): The citrus white fly is one of the insect pests against which California is zealously guarding her citrus orchard. It is for that reason that a local well known nurseryman should be commended for his cooperation in taking up with the County Horticultural Commissioner the importation of 10,000 gardenias from the State of Virginia, adjacent to, but not included in the known infested and quarantined against white fly area. A specimen shipment, ordered, subject to inspection from this supposedly clean area, was found by the quarantine inspectors of the county to be infested with the dreaded white fly, and as a consequence the nurseryman immediately cancelled all negotiations for the plants.

Louisiana W. E. Hinds (February 25): The citrus whitefly is hibernating on its usual host plants but the cold of early January resulted in rather complete defoliation of citrus and reduction of foliage on privets also which will result in reducing the initial infestation by this pest.

CITROPHILUS MEALYBUG (Pseudococcus kahani Green)

California Monthly News Letter Los Angeles County Horticultural Commission Volume 10, No. 2 (February 15): Navel oranges in the southern California section are reported as materially cleaner than last year. This is believed to be due to the liberation of Cryptolaemus for the control of the citrophilus mealybug.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida

J. R. Watson (February 23): Counts on the scale insects indicate that in the north-central and western parts of Florida about 85 per cent of the purple scale was killed by the freeze of January 3, at temperatures around 15°F. Those that escaped were almost entirely eggs.

CITRUS RUST MITE (Eriophyes oleivorus Ashm.)

Florida

J. R. Watson (February 23): Rust mites were more abundant than is usual during the winter. This is correlated with the unusual drought. Most of them seemed to have escaped temperature 26°F and above in the citrus belt.

CITRUS RED SPIDER (Paratetranychus citri McGregor)

California

Monthly News Letter Los Angeles County Horticultural Commission (January 15): Recent heavy rains and cold weather have not yet checked the citrus red spider which, according to H.H. Wilcomb, Acting Deputy Horticultural Commissioner in Charge of Citrus Pest Control in Los Angeles County, has been particularly active in all citrus districts of the county following the unusually warm days of late December and early January.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

WIREWORMS (Elateridae)

Missouri L. Haseman (February 24): In recent diggings in a blue grass sod orchard no wireworms were found even when the digging extended down to approximately 18 inches. In other diggings on a sunny slope in a grape vineyard wireworms in small numbers were found within the first 6 inches of soil.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon Don C. Mote (February 13): We took a hike out of town, climbing one of the hills commonly known as Baldy in this region, about 800 feet in elevation. On top of this hill we observed a few adults of Diabrotica soror climbing on the blades of grass and some flying through the air. Mr. Hill, under date of February 20, reports seeing one on grass in the Williamette Valley.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Alabama J. M. Robinson (February 15): It might interest you to know that Diabrotica duodecimpunctata has been active along in January and has been laying eggs for over a week. Some of the adults have been parasitised by an undetermined fly.

CONVERGENT LADYBEETLE (Hippodamia convergens Guer.)

Oregon Don C. Mote (February 13): We noticed while hiking on Baldy hills quite a number of ladybird beetles, Hippodamia convergens, active and on the wing.

TARNISHED PLANT BUG (Lygus pratensis L.)

Illinois S. C. Chandler (February 21): Tarnished plant bugs are not so abundant in hibernation as in the winter of 1926-27.

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla Riley)

California Monthly News Letter Los Angeles County, Hort. Comm., Vol. 10, No. 2, (February 15): The artichoke plume moth (Platyptilia carduidactyla) has become so destructive to artichoke in southern California that careful inspection is being inaugurated in the Los Angeles market. The larvae of this moth bore into the edible portions of the artichoke.

STRAWBERRY

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Missouri L. Haseman (February 24): Samples of soil and debris collected from

infested strawberry fields and stored in the laboratory for ascertaining overwintering, adult crown borer conditions, have shown that between 12 and 20 adult crown borers pass the winter in the soil and plant debris in an area of approximately 20 square feet.

BEANS

GREEN PEACH APHID (Myzus persicae Sulz.)

Florida

J. R. Watson (February 23): In late December and early January beans were generally heavily infested with Myzus persicae. The freeze of January 3 destroyed the hosts and of course the infestation of aphids as well.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California

J. C. Elmore (February 21): At present the pepper weevil is known to occur in Ventura (first found here in January, 1928), Los Angeles, Orange, San Diego, Riverside, and San Bernardino Counties. As indicated, Ventura County is a new locality and a very important one because pepper growing has become a very important crop there. The pepper crop in Orange and Los Angeles Counties was damaged about 25 per cent on the average with the losses running as high as 50 per cent in some places. The lesser damage compared to the previous season was due to the late spring and control operations. During the present winter immature states of the weevil have been found in abandoned fields to date (February 20). This condition is unusual as it is not common to find larvae and pupae so late in the season. Based on our estimate on previous knowledge, the pepper weevil will probably be among the front ranks as an outstanding insect pest this coming season. Many abandoned pepper fields have remained standing where until recently, it has been possible to collect hundreds of adult weevils for hibernation studies. There appears to be no hibernation so far this winter. This point is very interesting in view of the very definite hibernation period with the cotton boll weevil.

TURNIP

VEGETABLE WEEVIL (Listronotus obliquus Gyll.)

Mississippi

R. W. Harned (January 17): On January 7, J. E. McEvilly, Inspector of the State Plant Board at Laurel, wrote as follows: "I recently called on Mr. George Leatherberry of the Bucatunna Canning Company, and investigated the insect that caused great loss to turnips during the months of November and December. I made an inspection of an old turnip field and found the damage to be caused by the Australian tomato weevil or turnip weevil. I found larvae of this insect just below the surface of the ground. They were dead owing to the recent freeze. Mr. Leatherberry stated that about 90 per cent of the turnip crop in that section was killed or damaged by this insect. They had planned on packing 25,000 crates of greens but actually packed 7,000. They

had contracts for 60 acres in Green County and 110 acres in Wayne County, Mississippi, and 40 acres in Washington County, Alabama. The weevil caused serious damage to this entire acreage.

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Florida

J. R. Watson (February 23): In late December and early January turnips were generally heavily infested with Aphis pseudobrassicae Davis. The freeze of January 3 destroyed the hosts and of course the infestation of aphids as well.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Texas

Official Record, Vol. 7, No. 6, (February 8): A new and very extensive outbreak of the pink boll worm has developed in western Texas. This new invasion has been found to cover a considerable portion of Ector, Midland, and Marten Counties in the western part of the Texas cotton belt. This is probably the most serious situation in pink boll worm work that has developed since 1917.

BOLL WEEVIL (Anthonomus grandis Boh.)

Louisiana

W. E. Hinds (February 25): Winter minimum temperatures in Louisiana have not been low enough to accomplish any unusual destruction of boll weevils in hibernation. At the time of minimum cold it was also dry, and this combination is less effective than the same cold if immediately following heavy rains. Boll weevils have not yet begun to emerge from our hibernation cages, but we anticipate at least an average abundance of weevils to start the initial attack on cotton in Louisiana this spring. The defoliation of cotton by the leaf worm was much less general in the fall of 1927 than in 1926 and many more weevils, therefore, entered hibernation last fall.

Texas

F. L. Thomas (February 23): Fifty-three lbs. of moss examined at Sugarland showed that $28\frac{1}{2}$ per cent of the weevils present were alive. In this case the survival would amount to 225 weevils per ton. In 122 lbs. of moss examined at College Station 2.7 per cent, or 15.9 weevils, were alive per ton.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (February 25): The sugarcane borer population entering hibernation was decidedly less in the fall of 1927 than in the fall of 1926. Climatic conditions during the winter have been fairly favorable for borer survival but the infestation will undoubtedly

be much lighter this spring than a year ago. During February an excess of rainfall and frequent cold spells have held back the early growth of cane, but sprouting of cane in the fields has been unusually abundant for this time of year because of the greater vigor of the new varieties which are now being planted generally.

FOREST AND SHADE - TREE INSECTS

MISCELLANEOUS FEEDERS

WHITE-MARKED TUSSOCK MOTH (Hemerocampa laucostigma S. & A.)

Ohio

E. W. Mendenhall (February 16): The egg masses are very plentiful on many of the shade trees and in crevices of buildings and fences. At Columbus and throughout southwestern Ohio the egg masses of the tussock moth are very numerous.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (February 16): The winter cases of the bagworm are very numerous on shade trees and shrubs in and about Columbus and southwestern Ohio. Some of the public schools have a campaign to collect the bags. (February 23): The bagworm cocoons are very abundant on nearly all shade trees and many kinds of shrubbery in and about Dayton. This is a real pest in Dayton and Cincinnati. They are very destructive to many kinds of trees and especially to the conifers.

Missouri

L. Haseman (February 24): Through southern Missouri and through central Missouri a real infestation of this pest developed last year but recent inspections of the overwintering bags show that a heavy infestation of parasites is present and breeding experiments are under way to determine what species of parasites are present.

SPRING CANKER WORM (Paleacrita vernata Peck)

Kansas

H. B. Hungerford (February 13): Considerable emergence of both sexes was in progress on February 6. Males have been appearing on the tree bands since about the middle of January.

J. W. McColloch (February 23): Cankerworms are on the increase, and the possibilities are that there will be some damage to shade trees and fruit trees this year. Moths have been out at various times from early in January.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Ohio

E. W. Mendenhall (February 23): The oyster-shell scale is quite bad in Dayton and vicinity on soft maple, Carolina poplar trees, and lilac bushes and, as far as I have discovered, it is bad on poplar, ash, soft maple, lilac bushes, and some others, all through the southwestern part of the State.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Oregon

Don C. Mote (February 20): Scullen reports the boxelder bug common and active, crawling on summer days. One day last week a half cup of these bugs was collected in fifteen minutes.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (January 17): Insects belonging to the genus Pissodes, and probably to the species deodarae, were found causing serious injury to Cedrus deodara plants at Brookhaven during the latter part of December.

MAPLE

CECROPIA MOTH (Samia cecropia L.)

Ohio

E. W. Mendenhall (March 1): I find cecropia-moth cocoons quite plentiful on the maple trees in parks and along the streets in Columbus and other towns and cities in southwestern Ohio.

WALNUT SCALE (Aspidiotus juglans-regiae Comst.)

Ohio

E. W. Mendenhall (January 11): I found the soft maple trees in Celina, Mercer County, badly infested with the walnut scale.

OAK

GOLDEN OAK SCALE (Asterolecanium variolosum Ratz.)

New Zealand

Monthly Letter, Bur. Ent., No. 165, (January, 1928): Two shipments of the golden oak scale, parasitised by what appears to be Habrolepis dalmanni Westw., have recently been sent from Melrose to Dr. R. J. Tillyard, of New Zealand, where this scale is causing great damage to the trees.

PINE

MOUNTAIN PINE BEETLE (Dendroctonus monticolae Hopk.)

Montana

Official Record, Vol. 7, No. 7, (February 15): The attention of the Bureau of Entomology was called to an epidemic in 1909, when the mountain pine beetle was killing lodgepole pine in the Flathead National Forests, in Montana near the Canadian border. This infestation has spread southward through the Missoula and Bitterroot National Forest, for the most part on the west side of the Continental Divide. In reaching a low point on the Continental Divide between the Bitterroot and the Beaverhead Forests, the beetles started to

swarm across the Divide into the more accessible and merchantable timber surrounding the Bighole Basin. The present efforts of entomologists are to hold the beetle to the west side of the Divide.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

Southeastern
States

Monthly Letter, Bur. Ent., No. 165 (January, 1928): J. A. Beal reports that he has been in the field a considerable part of January making studies of the effect of a sudden ^{drop} in temperature in the latter part of December on broods of the southern pine beetle. He states that everywhere there seems to be very high mortality of all stages except the egg.

INSECTS ATTACKING GREENHOUSE AND
ORNAMENTAL PLANTS

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Maryland

E. N. Cory (January 16): The euonymus scale was reported by G. L. Sauter as heavily infesting euonymus at Woodlawn.

ROSE

ROSE SCALE (Aulacaspis rosae Bouche)

Missouri

L. Haseman (February 24): In recent inspection surveys in the Marionville district, roses, raspberries, and blackberries were found to show an unusual infestation of the rose scale. An examination of these shows them to be wintering in both the egg and the larval stages.

STRAWBERRY ROOT WORM (Paria canella Fab.)

Mississippi

R. W. Harned (January 17): On December 13, Inspector R. B. Deen found beetles injuring roses at Tupelo. These beetles were sent to Washington for definite determination, and were determined by Mr. Fisher of the Bureau of Entomology as Paria canella var. (vaguely different from var. Silvipes Horn).

INSECTS ATTACKING DOMESTIC
ANIMALS

POULTRY

TROPICAL FOWL MITE (Liponyssus bursa Berlese)

Missouri L. Haseman (February 24): Last spring this mite was reported on local poultry farms near Columbia and in the last few days a second report has come from Howell County with a record to the effect that the pest has been multiplying rapidly through the winter months causing injury to poultry in that county.

INSECTS INFESTING HOUSES AND
PREMISES

TERMITES

Kansas J. W. McColloch (February 23): Termites continue to be a problem, and we have received more reports of injury this winter than usual. In the past, most of our inquiries relative to termite damage came during the summer months.

STORED - PRODUCTS INSECTS

COCOA

RICE MOTH (Corcyra cephalonica Staint.)

Connecticut R. B. Friend (December 20): This insect was found infesting cocoa powder in a chocolate factory.

THE INSECT PEST SURVEY
BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 8

April 1, 1928

Number 2

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MARCH, 1928.

Spring surveys indicate that the Hessian fly is seriously infesting wheat in the central and southern counties of Kansas and parts of Oklahoma. Very serious injury to wheat in northeastern Virginia is also reported, so serious that farmers now contemplate plowing out the wheat.

The green-bug situation is rather serious in Oklahoma. Infestations have been prevalent all winter and but little parasitism has been observed so far. No heavy flights have been observed, however. This insect is also reported as abundant near Wichita Falls and Denton, Tex.

The peach borer has appeared in a nursery in Los Angeles County, Calif. Inasmuch as this pest is not established in this county, an eradication campaign has been inaugurated.

The vegetable weevil is again doing serious damage in southern Mississippi.

The seed corn maggot is being reported as seriously damaging truck in Mississippi, and with the cold, late spring, there is a possibility of successive outbreaks of this insect northward.

An interesting note on damage to sweet potatoes in storage has been received from Mississippi, recording the grading out of 40 per cent of a 4,400 bushel crop of sweet potatoes because of damage by wireworms.

PERIODICAL CICADA, BROOD II.

Brood II of the periodical cicada, the first large brood recorded from the Middle Atlantic States, is due to appear this spring. This brood occupies, in general, the territory immediately east of Brood I. A few rather doubtful records have been made from Indiana, Illinois, and Michigan, which certainly should be confirmed or disproved this year. Owing to the fact that it occurs throughout the densely populated region of the Middle Atlantic seaboard, it is one of the best recorded broods of this insect.

This brood was known by Fitch as Brood II and by Walsh and Riley as Brood VIII and later by Riley as Brood XII. It is now generally accepted as Brood II, following Marlatt. The brood has been definitely recorded since 1724 in Connecticut and since 1775 in New Jersey.

Since the publication of Bulletin No. 71 of the Bureau of Entomology several additional counties have been recorded, and many of the old localities recorded in this publication were not confirmed by reports when the brood appeared in 1911.

It is very important that as complete a record as possible of the occurrence of this insect be made this spring. The distribution by States and counties as now recorded is as follows. The underlined counties are in addition to those reported in Entomology Bulletin No. 71. Names in parentheses are those of towns, cities, and other localities.

Connecticut. -- Fairfield, Hartford, Litchfield, Middlesex, New Haven.

District of Columbia. -- Throughout.

Illinois. -- Dewitt (Clinton, 1911), Livingston (Fairbury, 1894), Mason (1877).

Indiana. -- Dearborn, Posey? (Mt. Vernon, 1894), Fountain (Silverwood, 1911).

Maryland. -- Anne Arundel, Calvert, Charles, Prince Georges, St. Marys, Montgomery (Glen Echo, 1911).

Michigan. -- Kalamazoo, Wayne (Detroit, in Woodmere Cemetery, 1894).

New Jersey. -- Entire State.

New York. -- Albany, Columbia, Dutchess, Chenango (Greene, 1894), Greene, Kings (Brooklyn; Prospect Park, 1894), New York (Bronx and Central Parks, 1894), Orange, Oswego (Oswego, 1894), Putnam, Rensselaer, Rockland, Saratoga, Suffolk (Huntington, 1894), Ulster, Washington, Westchester, and on Staten Island and Long Island.

North Carolina. -- Alamance (Burlington, 1894), Bertie?, Davie?, Forsyth?, Guilford, Burke (Morgantown, 1894), Caldwell (Yadkin Valley?, 1877), Granville (1843 and 1860), Iredell (northwest corner of the county), Orange, Rockingham, Rowan, Stokes, Surry, Wake?, Warren?, Yadkin?.

Pennsylvania. -- Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Pike, Potter, Schuylkill, Wyoming.

Tennessee. -- Hamilton (Chattanooga, 1894, newspaper report).

Virginia. -- Albemarle, Alexandria, Amherst, Appomattox, Bedford, Buckingham, Campbell, Caroline, Charlotte, Chesterfield (Bon Air, 1911), Culpeper, Cumberland (Tally, 1911), Fairfax, Fauquier, Fluvanna, Goochland, Hanover, Henrico, Henry (1877 and 1894), James City, Loudoun, Louisa, Lunenburg, Madison, Mecklenburg (Chase City and Boydton, 1911), Orange (Orange and Gordonsville, 1911), Page, Pittsylvania, Powhatan, Prince Edward, Rappahannock, Rockingham (1894 and 1911), Shenandoah (Seven Fountains, 1911), Spottsylvania, Stafford, Washington (Abingdon, 1911).

West Virginia. -- Brooke.

We urge that the collaborators of the Insect Pest Survey put forth every effort to get reports from all parts of their States this spring. A little newspaper publicity in the local papers where the insect is due to appear, requesting reports and specimens, will do much to facilitate this work.



PERIODICAL CICADA

Geographical distribution of Brood II.



GENERAL FEEDERS

WHITE GRUBS (Phyllophaga spp.)

North Carolina C. H. Brannon (March 3): Mr. O. O. Dukes, County Agent, Robeson County, reports considerable damage to tobacco plant beds by "white grubs."

A WHITE GRUB (Phyllophaga futilis Lec.)

Kansas J. W. McColloch (March 22): The first flight of May beetles this year occurred on the evening of March 21 at Manhattan.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Virginia W. J. Schoene (March 20): We have received several reports of serious injury to wheat in Frederick County by the Hessian fly, (March 26): The Hessian-fly injury in the northern part of the State, particularly in Frederick, Clark, and Shenandoah Counties, is serious. The winter has been very unfavorable to wheat in that vicinity and much of it is winter killed. This, together with the fly injury, is such that some of the farmers are thinking of plowing up their wheat fields.

Kansas J. W. McColloch (March 21): Reports of Hessian-fly damage are beginning to come in. Many fields in Harper County are badly infested. Reports to the State Board of Agriculture indicate losses from the fly in the central counties.

Oklahoma C. E. Sanborn (March 20): The Hessian fly was exceptionally abundant last fall and practically all wheat in the infested area sown early was badly infested, some of it to the extent that it was plowed under. Wheat sown after the date which we established as a fly-free date, October 12, was quite generally free from infestation. So many fields were sown before this date, however, that the infestation was carried over and at the present time the noninfested fields are doubtless being severely infested since the spring brood has been issued here for about two weeks.

GREEN BUG (Toxoptera graminum Rond.)

Oklahoma C. E. Sanborn (March 20): The green bug is prevalent

throughout the State, north and south from Newkirk to Ardmore. No particular flight of winged forms has yet occurred this spring. The infestation has been more or less prevalent since wheat germinated last fall. Infestation occurs also in barley and perhaps will be rather serious in oats. Not many parasites have been reported up to the present time.

C. S. Rude (March 14): This pest is showing up in a belt clear across from the southern to the northern part of Oklahoma. At present it is to be found in Jefferson, Comanche, Stephens, Grady, Caddo, Canadian, Blaine, Kinfisher, Logan, Noble, Kay, and Garfield Counties.

Texas

Monthly Letter Bureau of Entomology, No. 166, (February, 1928). Early in February F. W. Boyd, of the field laboratory at San Antonio, Tex., made a trip through northern Texas to study the effects of the extremely cold weather on green bugs. He reports that they continue to be abundant near Wichita Falls and in the neighborhood of Denton. So far as he was able to find, the cold weather has had no effect on them.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas

J. W. McColloch (February 27): Larvae of this species are abundant in wheat fields about Goodland.

CUTWORMS (Noctuidae)

Kansas

J. W. McColloch (March 20): Injury to wheat by cutworms has been reported as follows:

February 3.....	Goodland
March 12	Olmitz
March 16	Levant

Specimens received from Olmitz proved to be the army cutworm.

ALFALEA

PEA APHID (Illinoia pisi Kalt.)

Oklahoma

C. E. Sanborn (March 20): Macrosiphum pisi is doing considerable damage in Oklahoma to alfalfa. Reports are available from the western part of the State at Clinton. It is also prevalent in other localities and doing considerable damage.

C. S. Rude (March 14): They are numerous enough to call for control work in the northwestern part of the State.

FRUIT INSECTS

APPLE

APPLE APHID (Aphis pomi DeG.)

Oregon Don C. Mote (March 19): Mr. Thompson reports first green apple aphid on apple bud. Buds are in green-tip stage.

CODLING MOTH (Carpocapsa pomonella L.)

Oregon Don C. Mote (March 19): Mr. Thompson reports the codling moth still in the larval stage at Corvallis.

Washington Official Record, Vol. 7, No. 10, March 7: One of the introduced parasites of the codling moth, Ascoaster carpocapsae, seems to be well established in the vicinity of Yakima, and is increasing according to a report received recently by the Bureau of Entomology.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Arkansas W. J. Baerg (March 23): The young caterpillars began emerging on March 22 and 23. Egg masses are not numerous, and infestation will probably be light.

SCURFY SCALE (Chionaspis furfura Fitch)

Ohio E. W. Mendenhall (March 1): I find the scurfy scale quite bad on apple and pear trees in the home or farm orchards, especially where little care is given to spraying in the southwestern part of the State.

PEAR

PEAR THRIPS (Taeniothrips inconsequens Uzel)

Oregon Don C. Mote (March 7): Prune or pear thrips, Taeniothrips inconsequens Uzel, found in pear buds at Corvallis. (March 14): Prune buds just showing green; warm sunny weather. (March 17-18-19): Exceptionally warm weather; maximum emergence of prune and pear thrips. March 18, maximum temperature 73°F., minimum 42°F.

PEACH

PEACH BORER (Agarita exitiosa Say)

California Monthly News Letter, Los Angeles County Horticultural Commission, Vol. 10, No. 3 (March 15): The finding of the peach-root borer belonging to the family of clear-winged moths, a serious pest of peaches in 2 local nurseries,

occasioned an immediate eradication campaign under the supervision of Deputy Horticultural Commissioner G. R. Gorton, in charge of Insect Pest Quarantine in Los Angeles County. As a result it has been necessary to arrange for the destruction of some 3,000 flowering peach trees of various species in these nurseries. This action was taken by Mr. Gorton for the reason that this pest is not of common occurrence in Southern California and has never previously been reported in Los Angeles County.

A check of the previous distribution of all flowering peach trees from this nursery has been completed and necessary action taken to eliminate all possibility of infestation from this source. A detailed survey of all territory within a 2-mile radius of the infested nurseries has failed to show any other infestations.

COCONUT

DESTRUCTOR SCALE (Aspidiotus destructor Signoret)

Fiji Islands Montly Letter Bureau of Entomology, No. 166, February, 1928:
From James Zetek, in charge of the field laboratory at Ancon, Canal Zone, it is learned that on February 1, T. H. C. Taylor, Entomologist to the Department of Agriculture of Fiji, arrived in the Canal Zone on a journey from Trinidad, and was a visitor at the field laboratory until his departure on February 3 for the Fiji Islands. He brought with him a large shipment of cages containing young coconut palms heavily infested with the scale insect Aspidiotus destructor, and at least five species of ladybird beetles. This scale insect is particularly troublesome in Fiji, and Mr. Taylor believes that at least two of these ladybird beetles will prove very efficient in controlling it.

LEVUANA MOTH (Levuana iridescens Bethune-Baker)

Fiji Islands Monthly Letter Bureau of Entomology, No. 166, February, 1928:
The Levuana moth, a serious pest of the coconut in Fiji, is now under complete control by parasites introduced by Mr. Taylor

CITRUS

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (March 24): The citrus aphid (Aphis spiraeicola) is less in evidence this spring than in any year since 1923. This is caused by the severe drought and freezes of the past winter, which cut off its food supply. We are finding that the proportion of predators (ladybeetles and syrphus fly larvae) is three times as large as last year. They are having an appreciable effect in delaying the multiplication of the insect.

California Monthly News Letter, Los Angeles County Horticultural Commission
Vol. 10, No. 3 (March 15): Extensive spraying operations are

being conducted in the coastal citrus areas of Los Angeles County, particularly at Whittier, Rivera, and Downey, according to Deputy Horticultural Commissioner H. H. Wilcomb, in charge of Fumigation and Spraying in Los Angeles County, for the control of the citrus aphid. Considerable damage to new budwood and blossoms is being occasioned by the attack of this pest and immediate remedial measures have been necessary.

TRUCK CROP INSECTS

MISCELLANEOUS FEEDERS

GRAY BLISTER BEETLE (Epicauta cinerea Forst.)

Florida J. R. Watson (March 24): Blister beetles (Epicauta cinerea Forst.) have been unusually abundant this year and in several instances have severely attacked citrus trees, feeding largely on the petals, also on the tender leaves.

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

General Statement H. S. Barber (March 28): This species is only known from parthenogenetic females and appears to be an offshoot from Listroderes costirostis, which is indigenous to the eastern coast of South America from Brazil to Argentina. This latter species has both males and females. The parthenogenetic form, obliquus Gyll., has been introduced into various parts of the world where it is known as an economic pest. The sex-bearing species is not known except in its native country.

Mississippi R. W. Harned (March 24): The so-called vegetable weevil has been causing quite a bit of injury in the southern half of Mississippi. Serious damage to turnips was reported from Buckatunna March 13. Serious injury to tomato plants in cold frames was reported from Wesson and Fayette March 14.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Mississippi R. W. Harned (March 24): On March 22 a correspondent from Decatur sent to us some larvae that have been tentatively identified by Mr. J. N. Langston as the seed corn maggot, Phorbia fusciceps. A letter accompanying these specimens stated that they "had destroyed nearly all of my cabbage and onions."

POTATO

POTATO APHID (Illinoia solanifolii Ashm.)

California J. C. Elmore (March 10): The potato aphid is present in Los Angeles County in potato fields in large enough numbers to cause damage, but they are being kept in check by a large population of ladybird beetles and parasites. Other aphids also were present.

CABBAGE

CABBAGE APHID (Brevicoryne brassicae L.)

- Mississippi R. W. Harned (March 24): Aphids identified by A. L. Hamner as Brevicoryne brassicae were causing serious damage to collards at Yazoo City March 14.
- California J. C. Elmore (March 13): The cabbage aphid was observed to be very numerous in San Diego County and was reported to be doing considerable damage to cabbage and cauliflower.

HARLEQUIN BUG (Murgantia histrionica Hahn)

- Mississippi K. L. Cockerham (March 25): Rather severe damage is showing up on mustard. The crop had quite a yellowish tinge due to this pest. Adults were quite numerous at the time of examination practically no nymphs being noticed.

STRAWBERRY

A WEEVIL (Brachyrhinus rufifrons Gyll.)

- Oregon Don C. Mote (March 21): Mr. Wilcox reports overwintering strawberry root weevils active. Specimens of B. rugosostriatus found in house.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

- Pacific Coast Monthly News Letter Los Angeles County Horticultural Commission, Vol. 10, No. 3, March 15: Numerous small white grubs, later determined by Prof. E. C. Van Dyke of the University of California, Berkeley, as one of the strawberry root weevils (B. ovatus) were recently intercepted by Quarantine Inspector Roy E. Mason of the Los Angeles County Horticultural Commissioner's office in a shipment of plants in soil from the State of Massachusetts. The finding of these grubs was the result of the exceedingly careful examination made by Mr. Mason of the soil in this shipment. This insect is a serious pest of strawberries in the Pacific Northwest and one against which the California State Department of Agriculture maintains a rigid quarantine as it is not known to occur generally within the State.

A WEEVIL (Dyslobus decorata Lec.)

- Oregon Don C. Mote (March 21): Adult of Dyslobus decorata Lec. coming out above ground at Corvallis.
- D. granicollis Lec. has been recorded from Oregon as attacking strawberries which seems to be first record of this species as injurious in the larval stage to cultivated strawberries.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California

J. C. Elmore (February 28): The pepper weevil (adult stage) was found in large numbers on the common nightshade (probably Solanum douglasae) at Norwalk, Los Angeles County. Where pepper foliage is present in quantity the weevils have remained on the peppers but where the pepper fields have been recently plowed or where the peppers have been completely destroyed by frost the weevils have concentrated on the nightshade at the rate of 30 weevils per plant in the most outstanding instance. The weevils will not breed on nightshade but will live for some time on it. (March 13): The pepper weevil was found in all stages, eggs, larvae, pupae, and adults on bell peppers at Vista. Larvae and pupae were found also at Hillsdale 20 miles east of San Diego. These bell peppers are known as winter peppers and are plants that have survived the winter. They are cut back and the new growth produces a new or second crop. The pepper weevil may overwinter in large numbers on these plants.

Monthly News Letter Los Angeles County Horticultural Commission, Vol. 10, No. 3 (March 15): A cultural campaign for the control of the pepper weevil, a serious pest of that crop, present throughout Los Angeles County, and one which exacts a toll of 25 per cent of a crop valued at several thousand dollars in Southern California, requiring the immediate plowing and disking of all old pepper fields, has been complicated by the recent finding by Roy E. Campbell, in charge of Pepper Weevil Control Investigation, U. S. D. A., located at Alhambra, that this insect can be carried over on the common nightshade.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Mississippi

K. L. Cockerham (March 29): This is one of the most severe cases of damage that I have ever noted on onions at Biloxi. The tops were quite yellow and dying down.

ARTICHOKES

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla Riley)

California

Monthly News Letter Los Angeles County Horticultural Commission Vol. 10, No. 3 (March 15): Approximately twenty-five lots of artichokes have been rejected and reconditioning required during one week on the Los Angeles market according to the report of Deputy Horticultural Commissioner Paul K. Wilson, in charge of Fresh Fruit and Vegetable Standardization law

enforcement in Los Angeles County, due to infestations of the artichoke plume moth. This insect is recorded as occasionally being a serious pest of this crop throughout the commercial producing areas of the State. Apparently it is much more active this season than normally.

SWEET POTATOES

A WIREWORM (Monocrepidius sp.)

Mississippi K. L. Cockerham (March 24): In a sweet potato storage house at Picayune, where 4,400 bushels of potatoes were stored, it was found upon grading these potatoes for market that 40 per cent of them had to be graded out because of wireworm injury. This damage was, of course, done last fall but its seriousness was not realized at that time. The species responsible for this damage is probably Monocrepidius sp.

RADISHES

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi K. L. Cockerham (March 10): This species was found attacking
and radishes at Biloxi on this date. The grower reported that damage
Alabama was being noticed from them in his truck patches. The first
adult of this species was noted on February 28 near Grand Bay,
Alabama.

S O U T H E R N F I E L D C R O P I N S E C T S

SUGARCANE

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Louisiana T. E. Holloway and W. E. Haley (March 20): The sugarcane beetle,
Euetheola rugiceps Lec., was found to be slightly injuring
sugarcane at a sugar plantation near New Orleans. One adult was
found.

TOBACCO

TOBACCO FLEA BEETLE (Eotrix parvula Fab.)

North C. H. Brennon (March 14): This insect is severely damaging tobacco
Carolina plant beds in various sections of the eastern part of the State.

F O R E S T A N D S H A D E T R E E I N S E C T S

MISCELLANEOUS FEEDERS

BAGWORM (Thyridopteryx ephemeræformis Haw.)

Ohio E. W. Mendenhall (March 8): At Columbus the bags are very

numerous on many sorts of trees, including evergreen trees and shrubbery of different kinds. The bagworms are increasing each year and doing considerable damage. (March 9): At Springfield, the bags of the bagworm are very plentiful on shade trees and the worms are doing considerable damage especially to the boxelder trees. At Dayton these insects are also very plentiful on shade trees, including evergreens and also shrubbery of different kinds. There were some very severe outbreaks. At Cincinnati they are reported very numerous on different kinds of deciduous and evergreen trees and shrubbery.

Kansas

J. W. McColloch (March 10): Bagworms are reported abundant on cedars at Wetmore.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Kansas

J. W. McColloch (March 21): The boxelder bug is proving a nuisance in many homes over the State. Coming out of hibernation they have invaded dwellings in large numbers. Reported from the following counties:

Pawnee	Marshall
Barton	Riley
Jewell	Geary
Cloud	Coffee

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (March 24): Weevils belonging to the species Pissodes deodarae have been reported as causing serious injury to Cedrus deodara plants at Meridian and Jackson during the past month. Weevils tentatively identified as this species were collected from Italian cypress at Brookhaven, March 15.

ELMS

CANKERWORMS (Geometridae)

Kansas

J. W. McColloch (March 22): Cankerworms have been emerging in rather large numbers during the past month at Manhattan. The emergence has been especially heavy the last few days.

Missouri

L. Haseman (March 31): The first male cankerworm moth appeared March 13.

PINE

PINE BARK APHID. (Chermes pinicorticis Fitch)

North Carolina C. H. Brannon (March 20): This insect is reported by O. O. Dukes, County Agent, Lumberton, as doing severe damage to white pine trees in Lumberton.

G R E E N H O U S E A N D O R N A M E N T A L
P L A N T S

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Ohio E. W. Mendenhall (March 20): Chrysanthemum plants are badly infested with the midge in Springfield greenhouses, except the wholesale houses where regular and frequent inspections are made.

NARCISSUS

NARCISSUS BULB FLY (Merodon equestris Fab.)

Oregon Don C. Mote (March 16): At Corvallis 13 pupae and 2 larvae were found in soil of a narcissus bed. Only 1 larva was found in 23 bulbs examined.

TUBE ROSE

BULB MITE (Rhizoglyphus hyacinthi Boisd.)

North Carolina C. H. Brannon (March 26): This pest is causing severe damage to tube rose bulbs at Magnolia in Duplin County.

I N S E C T S A F F E C T I N G M A N A N D D O M E S T I C

A N I M A L S

MAN

BEDBUG (Cimex lectularius L.)

Virginia & Maryland F. C. Bishopp (March 29): During the last month reports of infestations of bedbugs in poultry houses have come in from Virginia and Maryland.

HOUSE FLY (Musca domestica L.)

Texas F. C. Bishopp (March 28): A few house flies have been observed in restaurants and other buildings from time to time during the winter. There has, apparently been a slight increase in their numbers during the last month.

CLUSTER FLY (Pollenia rulis Fab.)

Texas F. C. Bishopp (March 28): During the winter numerous reports have come in from various central and northeastern states of annoyance from cluster flies which have entered the attics of homes for hibernation.

CATTLE

COMMON CATTLE GRUB (Hypoderma lineatum DeVill.)

Virginia F. C. Bishopp (March 27): A very few specimens of fifth (last) stage larvae of this species are found to be present in the backs of cattle on this date at Fairfax and Leesburg. Heel flies are reported to have been annoying cattle considerably during the last two weeks and especially on March 26.

NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)

Virginia F. C. Bishopp (March 27): All stages of this species are present in the backs of dairy cattle at Fairfax and Leesburg, the maximum number found in any one animals being forty. In general the infestation in this section is light, as the majority of the cattle are entirely free.

HORN FLY (Haematobia irritans L.)

Texas D. C. Parman (March 24): In the Nueces Canyon there were scarcely any horn flies noted on the cattle along the road.

BLOWFLIES (Several species)

Texas D. C. Parman (March 24): Trappings at Uvalde indicate that flies in general have decreased rapidly during the week; Phormia regina about 75 per cent, Lucilia 50 per cent; Cochliomyia macellaria have increased about 10 per cent and others have decreased from 25 per cent to 50 per cent or more.

SCREW WORM (Cochliomyia macellaria Fab.)

Texas D. C. Parman (March 24): The first screw-worm flies to appear this spring were taken in a trap between March 2 and 9 at Uvalde.

GOAT

GOAT SCAB MITE (Chorioptes caprae Deb. Bourg.)

Texas F. C. Bishopp (March 24): During February a number of different flocks of goats were found to be infested with these mites. Prompt quarantine and energetic dipping of all infested or exposed animals is said to have practically, if not entirely, cleared up the infestations.

INSECTS INFESTING HOUSES AND PREMISE

TERMITES (Reticulitermes sp.)

- North Carolina C. H. Brannon (March 14): Mr. O. O. Dukes, County Agent, Robeson County, sent in specimens of wood severely damaged by termites. Mr. Dukes reports these pests attacking foundations, floors, and furniture in houses.
- Kansas J. W. McColloch (March 2): Termites have ruined stationery and supplies in the city clerk's office at Wellington. (March 10): Woodwork in dwellings at Clyde and Chanute has been injured. Considerable damage to a grain elevator is reported from Rush Center.
- Michigan R. H. Pettit (March 15): The first sending of Reticulitermes flavipes arrived today, from Grand Rapids, winged adults such as will probably be coming in for about a month now, from various parts of the State. These, of course, came from heated buildings.
- Mississippi K. L. Cockerham (March 29): Termites have been causing quite severe damage to some residences in Biloxi during the past several months. During March one residence in particular that was called to my attention had to have all of the sills replaced and all of the upright studding in the framework cut off about 8 to 10 inches above the foundation and replaced with new material. The ~~total~~ cost in repairing the damage done by these insects on this place was quite high. Numerous complaints from "flying ants" have been made recently.

A TERMITE (Kalotermes sp.)

- Ceylon Monthly Letter Bureau of Entomology, No. 166, February, 1928: F. P. Jepson, Assistant Entomologist, Department of Agriculture, Paradeniya, Ceylon, made a special trip from England in the latter part of January to consult with Dr. Snyder in regard to controlling termites attacking tea bushes and the woodwork of buildings in Ceylon. Certain species of termites in the genus Kalotermes are primary pests of the tea bushes, and are doing extensive damage. Mr. Jepson returned to England in the first week in February.

YELLOW ANT (Lasius interjectus Mayr)

- Kansas J. W. McColloch (March 15): This ant was swarming in a house at McPherson on February 3. Swarms in or near houses were noted early in March at Wichita and Manhattan.

CIGARETTE BEETLE (Lasioderma serricornis Fab.)

Kansas J. W. McColloch (February 25): The cigarette beetles are giving considerable trouble in upholstered furniture in a dwelling at Topeka.

POWDER-POST BEETLES (Lyctus spp.)

Kansas J. W. McColloch (February 6): Powder-post beetles are causing considerable damage to a stock of shovels in a hardware store at Canton. The handles are all badly infested.

CALIFORNIA LEAD CABLE BORER (Scobicia declivis Lec.)

California Official Record, Vol. 7, No. 12, March 21; The little black bug with a propensity for boring holes in the sheaths of telephone cables has been causing trouble in various sections of California. The tiny holes made by the insect allow moisture from the first rains to reach wires inside aerial cables and short-circuit the wires. Some say this bug's correct name is Scobicia declivis Lec., but telephone men have other names for it. This borer made its debut on the Pacific coast several years ago, and it has proved to be a perennial host whenever winter comes.

CLOVER MITE (Bryobia praetiosa Koch)

Kansas J. W. McColloch (February 14): The clover mite is proving a nuisance in houses at Chanute.

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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INSECT PEST SURVEY BULLETIN

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No. 3

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1928

As a whole, the entomological season is late, undoubtedly because of the delayed spring.

The Asiatic beetle (Anomala orientalis Waterh.) is becoming increasingly troublesome in Connecticut and southern Long Island. Thirty-eight thousand pounds of carbon disulphide has been used in treating lawns for the control of this pest. Larvae resumed feeding on grass roots on April 17, about two weeks earlier than last year.

Cutworm injury, as a whole, is not so serious as at this time last year. This may be due to the late season, however. Reports of damage to field crops have been reported from Kansas and Nebraska, and to truck from North Carolina and Mississippi.

The European red mite is again being reported in serious numbers in the northeastern States, westward to Ohio. The infestations in New York State, however, are somewhat lighter than usual.

Aphids in general are less abundant than last year. The apple aphid and the apple-grain aphid were appearing early in April in New England and New York State. The rosy apple aphids, however, did not appear until about the middle of the month in this region, and then in very small numbers.

The oriental fruit moth appeared for the first time on April 25, in the Fort Valley region of Georgia. This late start will undoubtedly reduce the number of generations for this year.

The spotted cucumber beetle is reported as destructive over a very wide territory. Heavy infestations have been reported in corn from Texas, and the adult beetles have been feeding on foliage and blossoms of peach in Georgia. Damage to truck crops was reported from Alabama and the western species (Diabrotica soror) was very seriously damaging young clover in the Willamette Valley of Oregon.

The first plum curculio eggs were observed in the Fort Valley section of Georgia April 6, this year. Last season they were found on March 25. This would indicate that only a single generation of the curculio will appear in this region during the coming season. Though considerable jarring has been done in southern Illinois no adults were observed up to April 18.

Although its numbers were reduced materially by the January freeze, the spiraea aphid was appearing in unusually heavy infestations by the end of April in Florida. Unusually heavy infestations in the citrus groves in southern California ~~are~~ also reported this year.

The Harlequin bug is appearing in large numbers over the Gulf region and in the South Atlantic States.

The Mexican bean beetle appeared in Alabama 13 days later than last year, and present indications are that winter survival will be very low in the State.

The horseradish flea beetle has been reported for the first time from the State of Missouri and is doing serious damage in commercial plantings in St. Louis County.

An unusual report of damage by the periodical cicada was received from the northern part of New Jersey, where the pupae had practically ruined a lawn in making their emergence holes.

During the latter part of the month a very serious outbreak of Buffalo gnats developed in Tallahatchee County, Miss. Approximately 100 head of horses and mules died as a result of this outbreak.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR THE MONTH OF APRIL, 1928

It is anticipated that grasshoppers will be below normal in British Columbia during 1928. Last year grasshopper outbreaks declined rapidly in many sections and heavy cold spring rains followed by a wet summer markedly reduced grasshopper abundance. In Saskatchewan, reports received late in 1927 indicate that grasshoppers which have been scarce in that province since 1924 are decidedly on the increase.

The estimated damage during 1927 in Saskatchewan by the wheat-stem sawfly, has been placed at \$4,565,000; by wireworms at \$4,145,000, and by cutworms at \$695,000. The total damage by these three pests is thus a little less than one half of that of 1926.

During the past two seasons, the potato stem-borer, Hydroecia micacia Esp. has been found or reported in every county in New Brunswick with the exception of Madawaska and Northumberland. It also appears to have a general distribution in Nova Scotia.

The eye-spotted budmoth Spilonota ocellana D. & S., has increased in numbers during the past three years in the St. John river valley and North Shore sections of New Brunswick.

The budmoth species, Pandemis limitata Rob., and Cacoecia persicana Fitch, have been found in orchards at many points in Kings County, N. S. These species probably occur throughout the Nova Scotia fruit belt.

As a result of scouting for the currant bud mite, Eriophyes ribis Nal., and the destruction of infested plants in the Gordon Head, Duncan and Westholme districts, B. C., during 1926 and 1927, it is believed that these areas are now free from infestation by this pest.

The European red mite has been increasing for several years in orchard sections of Nova Scotia and is now one of the major pests of apple.

The codling moth is not sufficiently numerous in British Columbia at the present time to affect any large percentage of the apple-growing sections.

As a result of control measures carried out since 1920, there are now no bark beetle outbreaks occurring in the yellow pine of British Columbia.

An infestation of tip-moth, Peronea variana Fern., was found affecting several square miles of hemlock between Britannia creek and Furry creek, B. C. in the latter part of 1927.

During the past winter, scouting for winter nests of the brown-tail moth in Nova Scotia failed to reveal any signs of the pest. As a result of this work, there has been a gradual reduction in brown-tail moth infestation in the Maritime Provinces from year to year, and it is hoped that the infestation has now been definitely eliminated.

GENERAL FEEDERS

ASIATIC BEETLE (Anomala orientalis Waterh.)

GENERAL STATEMENT

Official Record Vol. 7, No. 16 (April 18): The Asiatic beetle has been doing an increasing amount of damage in Connecticut and southern Long Island. The State of Connecticut and this department are engaged in a cooperative control project which is aimed especially at reducing infestations in the vicinity of New Haven, Conn., where the insect was discovered several years ago. The larvae of the beetle feed on the roots of grasses and other plants and cause complete destruction of sod on lawns, and also injure certain perennial plants, iris, peony, and phlox among them. The Asiatic beetle is related to the Japanese beetle and its life history is somewhat similar. In the control project the treatment resorted to involved the application of carbon-disulphid emulsion to the soil, as is done in the control of Japanese beetle larvae in lawns. In all, 366 properties covering about 43 acres were treated. Thirty-eight thousand pound of concentrated carbon-disulphide emulsion and more than 800,000 gallons of water were used. The treatment of the soil has been very effective in reducing the number of grubs throughout the area. Several of the parasites imported from the Orient which are effective on the Japanese beetle are also effective on the Asiatic beetle, and a number of species have been released in the heavily infested areas on Long Island.

Connecticut

R. B. Friend (April 24): Larvae came to surface of soil and resumed feeding a week ago, about two weeks earlier than last year at New Haven. Abundance as compared with average year appears to be about the same.

WHITE GRUBS (Phyllophaga spp.)

Missouri

L. Haseman (April 27): The common species of June beetle had been abundant just under the soil since the 15th of the month but owing to the cool temperature they have not begun to emerge or come to the lights at night. Their larvae appear less abundant in diggings than was the case a year ago.

CEREAL AND FORAGE CROP INSECT

WHEAT

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Kansas

J. W. McColloch (April 5): Cutworm injury to wheat is reported from Jennings, Wellington, Whitewater, and

Hays. Alfalfa has been damaged at Winfield and oats at Conway Springs. In every case where specimens have been sent they have proved to be the army cutworm. (April 14): The army cutworm seems to be general over the western half of Kansas, although the damage has not been so great as in former years.

Roger C. Smith (April 25): I find these cutworms plentiful in some fields. They were reported from Rydal, Kansas (Republic County). I anticipate very little damage though weather conditions are favorable.

Nebraska M. H. Swenk (January 1 to April 15): The army cutworm, which was very injurious in the winter wheat and alfalfa fields of western and central Nebraska from March 16 to April 30, 1925, this abundance being followed by a very heavy flight of moths from May 18 to June 24, decreased in abundance in fields in the same region the next season (1926) and from March 17 to May 18, but again produced a fairly heavy flight of moths May 26 to June 26. The species was injurious for a third season in this same area April 7 to 21, 1927, but failed to produce a heavy flight of moths in June, 1927, with the result that, so far this spring, we have had only a few reports of an injurious abundance of the army cutworms, these coming from Lincoln County to Cheyenne County during the first half of April.

ARMYWORM (Cirphis unipuncta Haw.)

Illinois W. P. Flint (April 18): There has been a rather heavy flight of the armyworm moths in southern and central Illinois in warm periods during the last two weeks.

HESSIAN FLY (Phytophaga destructor Say)

Kansas J. W. McColloch (April 14): The Hessian fly situation in the State is somewhat of a puzzle at the present time. The area of infestation is about the same as given in previous reports. Apparently there has been considerable loss from the fall infestation. Grain men covering the State report some loss throughout central Kansas. We know of one farmer who has plowed up 400 acres of wheat because of fly damage. Spring emergence of the fly began early in April and has been followed by snow and freezing weather. We have no information on the per cent of emergence previous to the freezes or the number of eggs and young maggots destroyed. It is, therefore, difficult to make any definite statements relative to the fly situation at this time.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas J. W. McColloch (April 1): False wireworm larvae are reported very abundant in wheat fields at Brownell and Ness City.

WIREWORMS (Elateridae)

Missouri L. Haseman (April 27): Wireworms in central Missouri seem to be less abundant than during the last few years.

CORN

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Texas E. L. Thomas (April 10): J. N. Rovey, entomologist, temporarily assigned to the Beaumont Substation, writes: "I have found the southern corn root worm in every field in Jefferson and Liberty Counties that I have been in, and I find that many farmers are confusing this worm with the sugarcane moth borer."

Mississippi R. W. Harned (April 24): Twelve-spotted cucumber beetles were collected on Cedrus deodara plants at Leakesville on March 31. The correspondent thought that these beetles were responsible for the injury to his plants because they were very abundant at the time he sent them in. Later developments, however, indicate that the primary cause of the injury was the larva of a weevil. A correspondent at Ridgeland sent to us on April 12 a number of 12-spotted cucumber beetles with the information that they were injuring everything in her garden. These beetles were noticed feeding on alfalfa and hairy vetch at the Branch Experiment Station, Holly Springs, early in April.

CHINCH BUG (Blissus leucopterus Say)

Texas E. L. Thomas (April 12): I find the chinch bugs in all my corn this year at Carmine, Fayette County. There are as many as 10 on a single stalk 7 or 8 inches tall. I had same in my corn last year on two plots where the corn died in a short time.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)

Kansas J. W. McColloch (April 4): An outbreak of the pea aphid is reported from an alfalfa field near Wellington.

Roger C. Smith (April 25): Damage to alfalfa by this insect is reported from Wellington, Wichita, Abilene, Manhattan, and Maple Hill, Kans. More abundant as compared with an average year, distribution is very local.

POTATO APHID (Illinoia solanifolii Ashm.)

Nevada G. C. Schweiss (April 9): Noticed on volunteer clumps about 3 to 4 inches high. Weather cool and below normal temperatures. They are quite numerous at Reno.

CLOVER

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

nsas Roger C. Smith (April 25): I find about the usual number of larvae and cocoons now at Manhattan. In some fields there are as many as 4 or 5 to a clump. Some larvae are very small while many have already formed cocoons. It is easy to find leaves damaged by them but there have been no reports of damage yet. Weather conditions are very favorable for this insect. Abundance as compared with average year appears to be about the same.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

gon Don C. Mote (April 18): Numerous reports of injury by this beetle to fields seeded to clover have been received. On April 9, Mr. Thompson visited several farms in Yamhill County and found evidences of damage in the clover fields in all farms visited. County agent White reported about 1,000 acres of young clover destroyed in Yamhill County this year. In every case the loss is attributed to this insect by the growers because the insect is present in great numbers in the clover fields. Mr. Thompson found the beetles present in the field and doing damage, but not as many, according to the farmers, as were present a week or so prior to this date.

F R U I T I N S E C T S

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

ssachusetts A. I. Bourne (April 21): From indications during the winter and reports that have come in from all over the State we are finding that the European red mite is still very prevalent and fully as abundant as last year, if not more so.

nnecticut Philip Garman (April 24): Reported by growers as abundant at New Haven on peaches and cherries in some localities. More abundant than usual.

ew York Cornell Department of Ent. News Letter (April 9):
Orange County (Sidney Jones): Eggs of the red mite are well scattered over the county but infestations are light in most orchards. In one orchard they were observed in great abundance, the greater number being found on Northern Spy apples.
Dutchess County (Ray Bender): In some plantings, especially in Northern Spy block, eggs of the red mite can be easily seen on the crotches of the trees. Infestations are generally light.
Ulster County (E. J. Hambleton): Interest in the red mite and oil sprays is general. However, upon examining many orchards during the past two weeks none were found with a heavy infestation of red mite eggs. Growers are under the impression that this pest is

getting a foothold in the Valley and are quite concerned about its control. Undoubtedly a number of them will use an oil emulsion regardless of what few eggs are present.

Greene County (A.S.Mills): Red mite eggs are not abundant.

Erie County (M.N.Taylor): There is a scattering of red spider eggs throughout the southern section of the county.

Monroe County (R.C.Coombs): Red mite eggs were found on all fruits in this section.

Clinton County (A.B.Burrell): Red mite eggs are scarce.

Cornell Dept. of Ent. News Letter (April 16):

Onondaga County (W.E.Field): Red mite eggs are present but not numerous.

Cornell Dept. of Ent. News Letter (April 30):

Suffolk County, (W.D.Benn): Red mite infestations seem to be slight, only one orchard has been found infested.

Greene County (A.S.Mills): Red mite eggs are found in small numbers in all orchards. One dusted orchard has some trees badly infested.

Ohio

E. W. Mendenhall (April 25): I find the European red mite quite bad in southern Ohio in apple orchards.

TARNISHED PLANT BUG (Lygus pratensis L.)

Illinois

S. C. Chandler (April 18): The first tarnished plant bugs were observed on peach buds which were showing pink on March 23. Since then cold weather has checked their activities, but even on warmer days there are fewer than usual.

Nebraska

M. H. Swenk (January 1 to April 15): During the first week in April the tarnished plant bug was found in abundance in apple and pear orchards at Nebraska City and Lincoln, where it did considerable damage by blasting the blossoms.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New York

Cornell Dept. of Ent. News Letter (April 9):

Ulster County (E.J.Hambleton): Very little scale has been found on apples and currants this spring.

Cornell Dept. of Ent. News Letter (April 30):

Chautauque County (C.H.Salisbury): Little San Jose scale is found on either apples or currants.

Georgia

Oliver I. Snapp (April 20): Apparently the San Jose scale is now under good control in most orchards at the Georgia Peach Belt. Lubricating-oil emulsion (3 per cent strength) was used on at least three-fourths of the sprayed acreage last winter, liquid lime-sulphur being used on the remainder.

Illinois

W. P. Flint (April 18): There has been the highest winter mortality of the San Jose scale ever shown by our records in this State. Examinations of scale on unsprayed trees at several points in southern Illinois, where the normal winter mortality runs about 60 to 70 per cent, shows a mortality this year of from 93 to 98 per cent. One lot of scale from unsprayed peach at Centralia showed only 0.8 per cent living scale. The temperatures of the past winter have not been unusually low. In most of the area where this high mortality occurred, the minimum temperature of the winter was from 5° to 8° below zero. Apparently the scale was killed by the very sudden changes which occurred during the winter, probably mainly by the drop occurring during the first days of January.

Nebraska

M. H. Swenk (January 1 to April 15): After several seasons of no new reports of infestations by the San Jose scale, during March, 1928, three new infestations were found in three different Nebraska localities; all of them were very restricted, however, and none of them involved commercial nurseries.

APPLE

APHIDAE

Massachusetts

A. I. Bourne (April 31): Throughout our college orchards the apple aphids are slightly less abundant than normally. Prof. Whitcomb from the eastern part of the State reports them as plentiful but not abnormally abundant in that section. The eggs began hatching in the region of the college here about April 8 to 10, although because of the cold weather which we have experienced since that time development has been very slow. Prof. Whitcomb reports the aphids as hatching in the region of Middlesex County on April 10.

Connecticut

M. P. Zappe (April 24): Very few aphids can be found on buds. Eggs very scarce. They appear to be very much less abundant than last year, in New Haven County.

New York

Cornell Dept. of Ent. News Letter (April 16):

Greene County (A.S. Mills): The aphids are mostly green and grain aphids. Very few rosy have been seen.

Onondaga County (W.E. Field): As yet, green and rosy aphids have not been observed.

Dutchess County (Ray Bender): Aphids are increasing in numbers but so far no rosy has been seen.

Niagara County (W.E. Blauvelt): Apple aphids have been found in only a few orchards. They were mostly the grain aphids.

Orange County (Sidney Jones): Most growers are ready for the delayed-dormant spray and if the weather is favorable many will spray early next week. Rosy aphids and green aphids are hatching but are not abundant in most orchards. Aphid infestation varies with different orchards.

Illinois S. C. Chandler (April 18): Very light infestation in southern part of State.

APPLE APHID (Aphis pomi DeG.)

New York Cornell Dept. of Ent. News Letter (April 16):
Wayne County (E.E.Frane): Green apple aphids were found the first of the week.
Ulster County (E.J.Hambleton): The green aphids are increasing in numbers.
Chautauqua County (G.H.Salisbury): The green aphid is quite scarce.
Monroe County (R.C.Coombs): The green aphid is present in moderate numbers in protected situations.
Niagara County (W.E.Blauvelt): Green aphid is fairly numerous in most orchards.

Cornell Dept. of Ent. News Letter (April 30):

Suffolk County (W.D.Been): So far this does not appear like an aphid year. Have examined several orchards in various parts of the Island this week, and could only find one that was infested with aphids. This one was rather severely so with what I took to be winged females of the green aphid and nymphs of the rosy aphids.

Dutchess County (Ray Bender): The aphids seem to be getting scarce.

Ulster County (E.J.Hambleton): In most well sprayed orchards aphids have been well cared for.

Greene County (A.S.Mills): The cluster bud spray was applied on Kieffers and Sackels in early sections. Several of the growers seem to have obtained a good kill of aphids.

Wayne County (E.E.Frane): Very few aphids have hatched since the cold spell started.

APPLE-GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York Cornell Dept. of Ent. News Letter (April 16):
Genesee County (R.L.Payne): First nymphs of the grain aphids were found on April 10.
Ulster County (E.J.Hambleton): Many grain aphids are in the second instar.
Suffolk County (W.D.Been): Early in the week aphids could be found. April 13, grain aphids could be found, sometimes two or three to the bud.

Cornell Dept. of Ent. News Letter (April 9):

Orange County (Sidney Jones): Aphid eggs are commonly found. On April 6 the first nymphs of the grain aphids were found feeding on the opening buds of McIntosh and Rome in orchards of the Warwick section. As many as nine nymphs were found on some of the buds.

Dutchess County (Ray Bender): Grain aphids are hatching; three is the usual number observed on a single bud but some buds have four and even five of them.

Ulster County (E.J.Hamblen): Grain aphids were first observed on April 2. During the warm weather that followed they increased in numbers.

Greene County (A.S.Mills): A few grain aphids have hatched out.

Onondaga County (W.E.Field): A considerable number of aphid eggs were found in one orchard and on Thursday, April 5, the first nymph was seen, presumably that of the grain aphid.

Eric County (M.N.Taylor): Aphid eggs are quite abundant. Several grain aphids were found on tips.

Ontario County (C.K.Bullock): Aphids were first observed hatching on April 6. They were probably the grain species.

Monroe County (R.C.Coombs): No aphids noted as yet, a careful search would probably reveal a few grain aphids. Many aphid eggs are sunken and lopsided as they were in 1926.

Geneva: (P.J.Parrott): Nymphs of the grain aphids appeared on April 5 on apple buds.

Clinton County (A.B.Burrell): On arrival, April 6, I found quite a few grain aphids in the first instar. The deposition of aphid eggs last fall seems moderate.

Cornell Dept. of Ent. News Letter (April 30):

Chautauqua County (G.H.Salisbury): The grain aphid is quite scarce.

Monroe County (R.C.Coombs): The grain aphid is present in moderate numbers in protected situations.

Niagara County (W.E.Blaauvelt): Grain aphids are fairly numerous in most orchards.

Illinois

J. H. Bigger (April 16): Can find no commercial damage to apples by aphids. The few seen are the grain aphids, in the western part of the State.

Missouri

L. Haseman (April 27): The eggs of this aphid hatched just prior to the first freeze on April 6 and 7, and they were not injured apparently by a temperature of 22° F.

ROSY APPLE APHID (Amuraphis roseus Baker)

New York

Cornell Dept. of Ent. News Letter (April 16):

Wayne County (E.E.Frane): No rosy aphids have been found to date.

Eric County (M.N.Taylor): So far to date no rosy aphids have been found.

Ulster County (E.J.Hamblen): The first rosy aphids have been observed on the 13th. The warning to begin the delayed-dormant application was sent out April 13, bearing emphasis on the fact that rosy aphids were just beginning to hatch but

that growers with large acreages who planned to use an oil could begin to spray at once.

Greene County (A. S. Mills): Rosy aphids have not been found in the Marlborough section on April 13. The percentage of rosy as compared with other species is low.

Onondaga County (T. E. Field): The first rosy aphid was seen in the more advanced locations, Tuesday April 24, but very few have hatched as yet.

Chautauqua County (G. H. Salisbury): One rosy aphid was found on April 25.

Wayne County (E. E. Frane): A few rosy aphids were seen on April 21, but none have been seen since that time.

Monroe County (R. C. Coombs): The rosy aphid has not yet been observed.

Niagara County (W. E. Blauvelt): Few rosy aphids have hatched as yet.

Oregon

Don C. Mote (April 18): Mr. Thompson reports all eggs hatched April 16. On April 5, not all eggs were hatched. Stem mothers, some nearly full grown, No colonies.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Mississippi

R. W. Harned (April 11): Eriosoma lanigerum on apple from Kosciusko were received on this date. Identification made by A. L. Hamner.

CODLING MOTH (Carpocapsa pomonella L.)

New York

Cornell Dept. of Ent. News Letter (April 16):

Ulster County (E. J. Hambleton): A fair supply of the codling moth cocoons have been obtained from trees that were banded last fall.

Cornell Dept. of Ent. News Letter (April 30):

Ulster County (E. J. Hambleton): The codling moth larvae are beginning to pupate.

Greene County (A. S. Mills): Codling moth is in the larval stage. A cage has been set up.

Chautauqua County (G. H. Salisbury): The codling moth is in the larval stage.

Missouri

L. Haseman (April 27): The first pupae noted in breeding cages at Columbia appeared between April 15 and 20. On April 25, between fifty and seventy-five per cent of the worms had pupated.

Arkansas

H. H. Schwardt (March 28): An adult male moth emerged in the laboratory on this date at Bentonville. The earliest previous record for this laboratory is April 13. The laboratory is heated

only in the daytime, and it is possible that the continuous alternation of high and low temperatures hastened the emergence of this individual.

Oregon

Don C. Mote (April 18): No pupae observed as yet, according to Mr. Thompson. Among 100 larvae examined no pupae were found.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Connecticut

M.P. Zappe (April 24): Eggs just hatching at New Haven and New London Counties. Very little foliage for caterpillars to feed on. Appear to be fewer than last year.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

New York

P.J. Chapman (April 7): Light infestations of this pest are common throughout the State. A large commercial orchard near Upper Red Hook, Dutchess County, has a very large number of egg masses at the present time. This is the first indication of a serious infestation in the Hudson River Valley fruit section.

Cornell Dept. of Ent. News Letter (April 9):

Orange County (Sidney Jones): Several egg masses of the leaf roller have been observed.

Dutchess County (Ray Bender): In the northern part of the county large numbers of leaf-roller egg masses have been seen. As many as five or six masses have been counted on a twig 6 inches in length. This infestation is in a well-cared-for orchard.

APPLE AND THORN SKELETONIZER (Hemierophila pariana Clerck)

New York

Cornell Dept. of Ent. News Letter (April 9):

Ontario County (C.K. Bullock): Apple and thorn skeletonizer moths were seen on April 6.

BUD MOTH (Tmetocera ocellana Schiff.)

New York

Cornell Dept. of Ent. News Letter (April 16):

Dutchess County (Ray Bender): The bud moth is working in the buds.

Ulster County (E.J. Hambleton): Bud moth larvae have been active for several days. With the buds of Kings, Johnathans, McIntosh, and other early varieties about ready for the delayed-dormant and some beyond the 1/4-inch stage only a few growers have started to spray. The buds are in such condition, having been held back, that they will probably make rapid growth.

Cornell Dept. of Ent. News Letter (April 30):

Greene County (A.S. Mills): The bud moth is not so abundant as usual.

Onondaga County (W.E. Field): Bud moth is at work in some orchards.

Chautauqua County (G.H. Salisbury): A few buds have been injured by bud moth larvae.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts A. I. Bourne (April 21): The tent caterpillars began hatching in this region (Amherst) April 7 to 9. By the latter date they were coming out in considerable numbers. In many cases this hatching took place before the apple buds had opened to any extent.

New York Cornell Dept. of Ent. News Letter (April 16):

Wayne County (E.E.Frane): Tent caterpillars were found hatching on the 12th.

Onondaga County (W.E.Field): Tent caterpillar egg masses are found in most orchards. A heavy blossoming is indicated on most trees, especially Wealthys and Baldwins. Cherries also show signs of heavy blossoming. If we have a few days of warm weather, the delayed-dormant application for early varieties of apples will probably come by the last of next week.

Ulster County (E.J.Hambleton): The apple tree tent caterpillars are feeding on the buds.

Dutchess County (Ray Bender): Apple tree tent caterpillars were found hatched on April 9.

A TENT CATERPILLAR (Malacosoma sp.)

New York Cornell Dept. of Ent. News Letter (April 16):

Orange County (Sidney Jones): Tent caterpillars have been observed.

Cornell Dept. of Ent. News Letter (April 30):

Greene County (A.S.Mills): Tent caterpillars hatching was observed on April 7. In comparison with the last two years, very few nests are present.

Mississippi R. W. Harned (April 21): Caterpillars belonging to the genus Malacosoma were collected on plum at Benton on April 13, on apple and peach at Lexington on April 16, on peach at Durant on April 16, and on peach at West on April 17. In each case the reporter stated that as yet no noticeable injury had been caused by these caterpillars.

A CASE BEARER (Coleophora sp.)

New York Cornell Dept. of Ent. News Letter (April 16):

Suffolk County (W.D.Been): The larva of the case bearer was also observed.

Columbia County (A.B.Buchholz): Case bearers are now working into the buds.

Cornell Dept. of Ent. News Letter (April 30):

Wayne County (E.E.Frane): Case bearers are at work on the buds.

CIGAR CASE BEARER (Coleophora fletcherella Fernald)

W York

Cornell Dept. of Ent. News Letter (April 9):

Orange County (Sidney Jones): In two orchards the cigar case bearers were found abundantly.

PISTOL CASE BEARER (Coleophora malivorella Riley)

W York

Cornell Dept. of Ent. News Letter (April 30):

Chautauqua County (G.H. Salisbury): Numerous pistol case bearers have been observed at work on buds.

FRUIT TREE LEAF BEETLE (Syneta albida Lec.)

egon

Don C. Mote (April 18): A grower near Corvallis came to the office with several specimens of this species on April 7, reporting them to be very numerous upon the leaves and blossoms of his apple trees. Last year he stated that they were very bad on the apples and cherries and that every cherry on his trees was deformed by this insect. Mr. Thompson reports observing the beetles for the past two weeks in orchards at Monroe. Three years ago, according to Mr. Thompson, no beetles were observed in this orchard. Last year they were numerous in one small section on the south ranch. This year they were showing up in other parts of the ranch. Mr. Wilcox reports Syneta made its appearance about April 1 at Salem, apparently more abundant this year than last, although rainy weather makes it difficult to get an accurate estimate.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

W York

Cornell Dept. of Ent. News Letter (April 30):

Orange County (Sidney Jones): Some evidences of injury from the round-headed apple tree borer were observed in two orchards.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

W York

Cornell Dept. of Ent. News Letter (April 30):

Chautauqua County (G.H. Salisbury): Borers worked havoc in two orchards at Fredonia and Mayville. At least 40 per cent of the sweet cherries are thought to be injured.

PEAR

PEAR PSYLLA (Psyllia pyricola L.)

nnecticut

E. P. Felt (April 27): There is a considerable abundance of pear psylla eggs at Stamford.

ssachusetts

A. I. Bourne (April 21): The pear psylla began coming out of hibernation and appearing on the trees about April 7 to 9, during the few warm days at that time. By the 10th they were just beginning to deposit eggs on the fruit spurs.

Connecticut

Philip Garman (April 24): Some eggs already laid at New Haven and Wallingford, but weather so far has not been favorable for a heavy deposition. Abundance as compared with last year appears to be about the same.

New York

Cornell Dept. of Ent. News Letter (April 9):

Orange County (Sidney Jones): Psylla flies have been abundant in pear orchards most of the week, and on April 4, the first eggs were found. Some of the growers are now applying an oil spray to their pears.

Dutchess County (Ray Bender): Pear psylla flies are out and have laid a few eggs.

Ulster County (E. J. Hambleton): Psylla flies appeared on pear trees during late March but unfavorable weather prevented egg laying until April 4. Many eggs have been laid since. Several growers have applied an oil emulsion spray under conditions not entirely satisfactory for good control. Serious losses caused by the psylla last season discouraged many men and as a result hundreds of trees, principally Kieffers, have been cut down. In some orchards where sprays were either omitted or not thoroughly applied and where the foliage was lost a large number of the fruit spurs were killed.

Genesee County (R. L. Payne): Pear psylla flies are abundant in most orchards and a few growers have applied an oil spray. Pear buds seem to be slightly injured as the result of a frost which followed a few warm days in the latter part of January.

Ontario County (C. K. Bullock): The pear psylla started egg laying on April 4, and has laid a large number of eggs since then.

Wayne County (E. E. Frane): The pear psylla was found in numbers on Monday and a few growers saw them the week before. Eggs were first observed on April 13 and now a few eggs can be found in most orchards.

Monroe County (R. C. Coombs): The pear psylla has been laying eggs all week.

Niagara County (W. E. Blauvelt): Following warm weather since April 1 psylla flies are now present on the trees in considerable numbers. Up to April 5 no eggs could be found. On April 6 a few eggs were laid and on Friday the 7th egg laying was general and fairly heavy.

Geneva (P. J. Parrott): At Geneva, while a few eggs were deposited by the pear psylla on April 1, extensive egg laying did not commence until April 4.

Columbia County (A. B. Buckholz): Pear psylla flies have been abundant in pear trees all week. No eggs were noticed until the last half of the week. Today, April 7, eggs are numerous.

Cornell Dept. of Ent. News Letter (April 16):

Orange County (Sidney Jones): Psylla eggs are quite

numerous in most orchards. In one orchard where oil had been applied psylla eggs were found in large numbers. If warm weather prevails next week Kieffers will be ready for the cluster-bud spray.

Greene County (A.S.Mills): Many pear psylla eggs have been laid.

Niagara County (W.E.Blauvelt): Very little egg laying by the pear psylla has occurred since Friday the 6th because of cold weather. Very few psylla eggs are present in the majority of orchards.

There are fewer psylla present on the trees than were out last Thursday and Friday. The majority of growers using oil spray on pear for psylla applied this spray this week beginning the 11th.

Genesee County (R.L.Payne): Pear psylla flies are not abundant and few eggs have been laid.

Wayne County (E.E.Frane): Pear psylla eggs are numerous. A few growers applied an oil spray this week in orchards where there were plenty of eggs. They seem to have a lot of faith in the killing powers of the oily residue. Cherries seemingly were not hurt by the low temperatures of April 8, 9, and 10. The thermometer dropped to 20 degrees on each of these nights.

Cornell Dept. of Ent. News Letter (April 30):

Greene County (A.S.Mills): Although psylla flies have decreased in numbers they are still laying eggs on the twigs, cluster buds, and leaves. The eggs are abundant. Many psylla eggs were found in an orchard where scalecide was applied on April 5.

Genesee County (R.L.Payne): Pear psylla eggs were not abundant in the few orchards visited during the week. A few eggs were found on trees that had been sprayed with "Junior Red Engine Oil" on April 5 and 6.

Wayne County (E.E.Frane): Pear psylla eggs are quite numerous now. The flies were active today and many fresh eggs were laid (April 26):

Monroe County (R.C.Coombs): Pear psylla eggs are present in moderate numbers.

Niagara County (W.E.Blauvelt): Pear psylla flies are present on trees in rather small numbers and have been laying eggs. In some orchards it is still difficult to find any flies and eggs are scarce. Flies are present and laying eggs in many of the oil sprayed orchards, but egg laying is apparently not so heavy as in some of the unsprayed orchards.

Cornell Dept. of Ent. News Letter (April 9):

St. Catharines (J.C.Chamberlain): Pear psylla adults have been numerous on the twigs at St. Catharines. Psylla eggs were first noticed on April 5.

PEAR THRIPS (Taeniothrips inconsequens Uzel)

Cornell Dept. of Ent. News Letter (April 9):

Dutchess County (Ray Bender): No pear thrips were observed

thus far,

Greene County (A.S.Mills): No pear thrips have been found in favorable locations.

Columbia County (A.B.Buchholz): Pear thrips were found working in pear buds on April 7.

Cornell Dept. of Ent. News Letter (April 16):

Dutchess County (Ray Bender): Three warnings were sent out this week, card on pear thrips, April 9, letter on delayed-dormant on apples on April 12, and a letter on delayed-dormant on sweet cherries on April 13.

Ulster County (E.J.Hambleton): Pear thrips have been feeding for at least a week. In no case have they been found to be really serious thus far.

Greene County (A.S.Mills): Pear thrips were found inside Kieffer buds on April 9. Since then a few have been found in apple and pear buds but no definite swarming period was observed.

Orange County (Sidney Jones): Pear thrips were observed on April 7, in the Newburgh district. They appear numerous only in a few orchards. A few growers have sprayed for the pear thrips but most growers are not intending to spray. No definite swarming period has been observed.

New
Cornell Dept. of Ent. News Letter (April 30):

Greene County (A.S.Mills): Pear thrips are found in all orchards in apple and pear buds. Few pear buds have been blasted by them.

QUINCE

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

New York

Cornell Dept. of Ent. News Letter (April 9):

Greene County (A.S.Mills): The lecanium scale is serious in one blackberry patch.

Niagara County (W.E.Blauvelt): Several severe infestations of the European fruit lecanium on plums and prunes are being treated with oil.

Cornell Dept. of Ent. News Letter (April 16):

Niagara County (W.E.Blauvelt): A very severe infestation of the European fruit lecanium scale was noted in one quince orchard. Pruning is still going on.

Cornell Dept. of Ent. News Letter (April 30):

Chautauqua County (G.H.Salisbury): An isolated orchard or two have much lecanium scale.

PEACH

COTTONY PEACH SCALE (Pulvinaria amygdali Ckll.)

New York

P. J. Chapman (April 7): Several orchards are infested in Niagara.,

Orleans, Monroe, and Wayne Counties. Field assistants report that fewer orchards are seriously infested this year than in 1927. Growers have applied an oil spray for this pest in several instances.

Cornell Dept. of Ent. News Letter (April 9):

Niagara County (W. E. Blauvelt): There are still a few infestations of the cottony peach scale for which growers will apply an oil spray.

Wayne County (E. E. Frane): The few orchards with the cottony scale are being sprayed this week.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Georgia

Oliver I. Snapp and H. S. Swingle (April 19): No injury from this insect has shown up yet in the Fort Valley. Last year the first twig injury was noted on April 2. With such a late start the usual number of generations is not anticipated. (April 25): The first oriental peach moth larva of the 1928 season was observed in the field today. The individual was about 2 days old. The moth evidently started to work about three weeks later this year than it did in 1927, as the first larvae was observed in the field last year on April 2.

GREEN PEACH APHID (Myzus persicae Sulz.)

New York

Cornell Dept. of Ent. News Letter (April 30):

Ulster County (E. J. Hambleton): Green peach aphids were found on the 23rd nearly half grown.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

North Carolina

R. T. Leiby (May 4): According to J. A. Harris adult curculios are being taken more commonly than usual by jarring on peach trees in North Carolina's Sandhill commercial peach section. The first eggs are now being laid. A few young larvae have been observed. The season is two to three weeks behind last year.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Georgia

Oliver I. Snapp (April 20): For two or three weeks these insects have been numerous in peach orchards at Fort Valley, feeding on the foliage and peach flowers. In some cases the insect damaged the little peaches.

SOLDIER BUGS (Pentatomidae)

Illinois

S. C. Chandler (April 18): The first pentatomids observed this season in southern Illinois on peach were jarred from trees in Johnson County April 13. Stage of peach, petals three-fourths off.

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York

Cornell Dept. of Ent. News Letter (April 9):

Dutchess County (Ray Bender): The black cherry aphid is starting to hatch on sweet cherries.

Ulster County (E. J. Hambleton): The black cherry aphid began hatching April 4 but is not out in numbers.

Cornell Dept. of Ent. News Letter (April 16):

Wayne County (E. E. Frane): Black cherry aphids are hatching.

Orange County (Sidney Jones): The black cherry aphid does not appear to be abundant on sweet cherries in this county. Only a few growers have sprayed their sweet cherries to date.

Niagara County (W. E. Blauvelt): Black cherry aphids have begun to hatch in some sections of the county.

Ulster County (E. J. Hambleton): Sweet cherries in some localities are heavily infested with the cherry aphid which along the river for some blocks will soon be ready for the delayed-dormant treatment as the green blossom buds are beginning to show.

Cornell Dept. of Ent. News Letter (April 30):

Niagara County (W. E. Blauvelt): Black cherry aphids are quite numerous in some orchards, but absent or very scarce in the majority.

Greene County (A. S. Mills): The cherry aphid is present in small numbers.

Canada

Cornell Dept. of Ent. News Letter (April 30):

St. Catharines, (G. C. Chamberlain): Black cherry aphids seem to be quite numerous on the buds.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

Oliver I. Snapp and H. S. Swingle (April 20): The first curculio egg in the field was not observed until April 6. Last year the first eggs were found on March 25. Only one generation of this insect is anticipated here this year (Fort Valley) on account of its late start. Many adults have been taken by jarring in the orchard since the first egg was found, and the indications are that the infestation is fairly heavy, irrespective of low temperatures experienced last winter. Growers are now putting on the second application of spray or dust for the control of the curculio.

Illinois

W. P. Flint (April 18): Examinations by Mr. Chandler and jarrings in southern Illinois have failed to show any plum curculio present in the peach orchards up to this date.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi

R. W. Harned (April 3): The rusty plum aphid on plum was reported from Durant on this date, and on plum from McComb on April 20.

Kansas

F. C. Bishopp (April 28): Plum aphid is causing considerable loss in Dallas by heavily infesting various kinds of cultivated plums.

GRAPE

BLUEBERRY FLEA BEETLE (Haltica torquata Lec.)

California

A. C. Davis (April 10): The beetles were first noticed Saturday morning, April 7. By April 10, a number of vines had been almost completely stripped of leaves and perhaps 25 or 30 badly damaged. The beetles are now (April 10) distributed throughout the vineyard of about 60 acres 3 miles east of Placentia, but seem to concentrate upon certain plants.

CURRENT

CURRENT APHID (Myzus ribis L.)

York

Cornell Dept. of Ent. News Letter (April 30):

Chautauque County (G. H. Salisbury): No current aphids have been seen yet though current leaves are out.

PECAN

APPLE TWIG BORER (Amphicerus bicaudatus Say)

Mississippi

R. W. Harned (April 24): Pecan twigs showing injury by the grape cane borer, Schistoceros hamatus, were received from Marks on April 17.

RED-SHOULDERED SHOT-HOLE BORER (Xylobiops basilaris Say)

Mississippi

R. W. Harned (April 24): A number of specimens of the red-shouldered shot-hole borer were taken from pecan trees at Jackson on April 4. The pecan tree received appeared to be green and living but contained living larvae, pupae, and adults of this species.

CITRUS

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida

J. R. Watson (April 25): The citrus aphid was very scarce during the early spring owing to the unusually severe freezes of January, but the month of April has been rather cold and backward and the

aphids have increased very rapidly so there is now an unusually heavy infestation for this time of the year. The first flush of growth is out of danger but severe damage may result to trees injured by cold.

APHIDIIDAE

California Monthly News Letter Los Angeles Horticultural Commission, Volume 10, No. 4 (April 15): The spraying operation conducted this season in citrus orchards for the control of an unusually heavy infestation of aphids has been very well handled and satisfactory control obtained throughout the County according to Deputy Horticultural Commissioner H.H. Wilcomb, in Charge of Fumigation and spraying. During the first two weeks of April parasites entered into the control to such an extent that since the middle of April practically no further spraying has needed to be done. The parasites mostly responsible for such good control in the majority of groves seem to be the western syrphid fly and a fungus parasite which is probably Entomophthora aphidis.

FLORIDA FLOWER THRIPS (Frankliniella tritici bispinosa Morgan)

Florida J.R. Watson (April 25): The common flower thrips has been unusually abundant. This is due to the unusual dry weather which prevailed up until the middle of April.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California Monthly News Letter Los Angeles County Horticultural Commission, Volume 10, No. 4 (April 15): A preliminary summary of present inspections made by H. M. Armitage, Deputy Horticultural Commissioner in charge of Insectary, indicates that infestations are running 7 per cent heavy, 14 per cent medium, and the balance light. This is somewhat heavier than previously estimated, but may be attributed to the fact that the initial inspections are being made in the known heavily infested areas.

Production of Cryptolaemus at the county insectaries indicates that it will be possible to cover all heavy infestations during April, and those of medium degree during the first two weeks of May. The balance of production will be used in covering as many of the light infestations as may seem practical. All liberations will be completed in sufficient time so that, providing field conditions are favorable, control of the mealybug will be secured before any serious injury occurs. Liberations of thirty adult Cryptolaemus per tree in lots of ten at ten-day intervals are contemplated in the case of heavy infestations, in an effort to "speed-up" control. In a similar manner medium infestations will be covered, using twenty beetles per tree. In the case of light infestations only ten beetles will be used per tree as in past seasons.

BLACK SCALE (Saissetia oleae Bern.)

California

Monthly News Letter Los Angeles County Horticultural Commission, Vol. 10, No. 4 (April 15): An intensive campaign has been carried on by the Los Angeles Horticultural Commissioner's Office during the winter for the control of black scale on olives in the Sylmar District. The purpose of the campaign has been to protect the citrus properties in that locality and the commercial olive acreage from infestation from miscellaneous uncared-for olive plantings.

A recent survey made in the various citrus sections of Los Angeles County by Deputy Commissioner H. H. Wilcomb, in Charge of Fumigation and Spraying, indicated that the black scale will have developed to a point by the middle of April which will permit the grading of orchards as to degree of infestation. While the size of the scale varies widely in the different districts, it is felt that inspection can start generally in all districts by the 15th of April.

RED SPIDER (Tetranychus telarius L.)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Volume 10, No. 4, (April 15): Considerable dusting of citrus is being done this season for the control of red spider throughout the county.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (April 24): Specimens of the vegetable weevil were received on March 22 from Hermanville. Cabbage and mustard plants had been seriously injured by these insects. In fact, the correspondent stated that 50 per cent of his cabbage had been destroyed.

BLACK CUTWORM (Agrotis ypsilon Rott.)

North
Carolina

J. N. Tenhet (April 10): Cutworms are unusually abundant and destructive to cabbage, corn, potatoes, lettuce, and all kinds of truck in the locality of Chadbourn. Fully 90 per cent of all cutworms observed were Agrotis ypsilon.

SOBBUGS (Oniscidae).

New York

Cornell Dept. Ent. News Letter (April 18): A very heavy infestation of sowbugs in a greenhouse caused considerable anxiety to a tomato grower in Sheridan. The bottoms and sides of the flats were well covered by the crustaceans and they were attacking a row of cucumbers which were growing between the flats.

Mississippi

R. W. Harned (April 24): A correspondent at Crystal Springs wrote us on April 11 that pillbugs were very numerous around his watermelon and sweet potato plants. He indicated that as yet he could see no serious damage that they had caused.

MYRIAPODS (Symphylidae)

Illinois

C. C. Compton (April 2): Symphylids completely destroyed a crop of cucumbers, tomatoes, and lettuce comprising about 1 acre under glass at Melrose Park. The growth of wild mustard, timothy, and thistle was also severely injured.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

North
Carolina

C. H. Brennon (April 30): The potato bug is causing the usual damage and a vigorous campaign is under way.

Mississippi

R. W. Harned (April 24): The Colorado potato beetle was observed on crepevines at Lucedale April 16. The reporter stated that these were the first specimens that he had noticed in that vicinity during 1928. Specimens were sent to us on April 12 from a garden at Ridgeland.

A WIREWORM (Heteroderes sp.)

Mississippi K. L. Cockerham (May 1): Damage to Irish potatoes by this insect was reported from Picayune, Pearl River County. This evidently is the same species of wireworm that has been causing severe damage to the sweet-potato crop for the last year or so.

A NITIDULID (Heterostomus pulicarius L.)

Pennsylvania H. F. Crowell (April 20): Heterostomus pulicarius L. was found infesting tomato flowers in a greenhouse at Erie.

CABBAGE

HARLEQUIN BUG (Murgantia histrionica Hahn)

North Carolina J. N. Tenhet (April 3): The harlequin bug has appeared on broccoli in considerable numbers. No appreciable damage has been noted to broccoli, but it is quite probable that the early appearance of this insect may presage an outbreak later in the summer.

C. H. Brannon (April 30): This insect promises to cause even worse damage in the State than usual. This pest is one of the worst insect enemies in the State.

Alabama L. W. Brannon (March 27): Fifty harlequin bugs were collected on March 27 in the locality of Birmingham feeding on turnips and mustard. Pairs were copulating when found. The temperature when these bugs were found was 55° F. The first eggs from these bugs were deposited in the insectary on April 4. This insect does considerable damage in this district each season, and present indications are that it will continue to do so.

Mississippi R. W. Harned (April 24): Serious injury to cabbage at Sessums and to collards at Madison by the harlequin bug was reported April 13. Specimens accompanied the complaint in each case.

CABBAGE APHID (Brevicoryne brassicae L.)

Mississippi R. W. Harned (April 4): Brevicoryne brassicae has been reported attacking cabbage at Estes Mills. Specimens identified by A. L. Hanner.

IMPORTED CABBAGE WORM (Pieris rapae L.)

Mississippi R. W. Harned (April 24): Specimens of Pieris rapae were received April 12, from Durant, where they were reported as causing serious injury to cabbage plants.

VARIEGATED CUTWORM (Lycophotia margaritosa saucia Hbn.)

Mississippi R. W. Harned (April 24): Cutworms tentatively identified by J. M.

Langston as Lycophotia margaritosa var. saucia were reported as causing injury to cabbage plants at Eden April 18.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Missouri

L. Haseman (April 27): In Jackson County a local epidemic of the cabbage curculio has been seriously damaging cabbage in cold frames and to some extent in the field.

STRAWBERRY

A WEEVIL (Dyslobus decorata Lec.)

Oregon

Don C. Mote (April 18): Dyslobus decorata began emerging from the ground, according to Mr. Wilcox, about March 20, most of the adults emerging by April 1. Up to April 14 no eggs had been found in the field. The altitude of the country is 1,400 feet.

A WEEVIL (Dyslobus granicollis Lec.)

Oregon

Don C. Mote (April 18): Dyslobus granicollis began emerging from the ground about March 10. A few eggs were found in the field by April 12.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

R. W. Harned (April 24): The fire ant was received on April 21 from Waveland, where it was reported as injuring strawberries.

ANT ANT (Iridomyrmex analis André)

Mississippi

R. W. Harned (April 24): The ill-smelling ant was received from Waveland on April 21, where it was reported as injuring strawberries.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Alabama

L. W. Brannon (April 12): The first bean beetle of the 1928 season was found feeding on beans in the field on April 12. This was 13 days later than last season. On April 2 beans were up on one truck farm but no beetles were found on them until April 12. On this date only one Mexican bean beetle was found on 16 rows of beans about 200 feet long. No signs of beetle feeding were found on any plants except the one where the beetle was found. From present indications the winter survival will be very low. During the fall of 1927, from September 21 to November 3, 3,370 beetles were placed in hibernation and very little activity has been seen to date. Only 5 beetles have been seen active in the cage on any one date, and on April 12, when the first beetle was found in the

field, only 2 beetles were active in the cage. On April 10 7 beetles were found in another field on 17 rows 75 feet long.

BEAN LEAF BEETLE (Corotoma trifurcata Forst.)

Alabama

L. W. Brannon (April 4): The first bean leaf beetle of the 1928 season in the locality of Birmingham was found feeding on beans in the field on April 4. This was eight days sooner than the first Mexican bean beetle was found. These beetles are not very numerous on the beans now and are not doing so much damage and are not so numerous as the southern corn root worm.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

North
Carolina

J. H. Brannon (April 5): The adult of this species is causing extensive damage to lettuce in Brunswick County. Specimens of the insect and feeding damage sent in by County Agent, J. E. Dodson.

Alabama

L. W. Brannon (March 29): The first southern corn root worm adults of the 1928 season were found feeding on young beans in the locality of Birmingham on March 29. Thirteen of these beetles were collected on 16 rows of small beans about 200 feet long on April 12. Most of the females collected had enlarged abdomens, indicating that oviposition was taking place. Some of the small bean leaves showed considerable injury caused by this insect.

CARROTS

CARROT RUST FLY (Psila rosae Fab.)

New York

G. R. Crosby (March 14): Carrots infested with Psila rosae have been received from Canton.

RADISH

HORSE-RADISH FLEA BEETLE (Phyllotreta armoraciae Koch)

Missouri

L. H. Hensen (April 6): I am taking this opportunity of reporting the finding of a new flea beetle to this State or at least to this department. It is the European species, Phyllotreta armoraciae Koch, and is reported as being very destructive to horse-radish in those parts of St. Louis County where horse-radish is a commercial crop. We are expecting to undertake some breeding experiments with this little beetle in the laboratory though we will try not to allow it to get out of captivity, as it might prove to be a serious addition to our local abundant supply of flea beetles (April 27): Assistant county agent, Seaton of St. Louis County has reported a serious outbreak of this flea beetle on horse-radish in that county. It lives through the winter feeding on warm dots on the small horse-radish roots left in the soil after the crop is dug in the fall.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Kansas

H. B. Fungertord (April 5): The striped turnip flea beetle, Phyllotreta vittata, is very destructive to young radishes this season in the eastern part of the State.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

General
Statement

U. S. D. A. (Release of April 5): The annual examinations of moss conducted by the Bureau of Entomology, United States Department of Agriculture, for 1928, to determine the survival of boll weevils in hibernation, have been completed. In addition to the examinations made by the Bureau of Entomology, similar ones, included in this report, were carried out at three different points in Texas by F. L. Thomas of the Texas State Experiment Station. The examinations in South Carolina were made in cooperation with the South Carolina Experiment Station.

As in past years, these examinations have been made only in Spanish moss and the findings are recorded in live weevils per ton of moss. The records for 1928 are:

	Live weevils per ton of moss.
Northern Louisiana.....	1.0
Southern Louisiana.....	365.1
Louisiana, State average.....	65.9
Alabama.....	45.2
Georgia.....	88.7
South Carolina.....	21.1
Texas.....	74.5

Temperatures, with the exception of a few days in early January have been comparatively mild during the past winter. It will be recalled that conditions, generally speaking, were favorable in most sections for a large number of weevils entering hibernation last fall.

In considering the records in northeastern Louisiana, it should be remembered that most of this area was included in the Mississippi River overflow during the season of 1927 and that in some sections very little cotton was planted. These records thus represent primarily the after-effect of the overflow rather than winter mortality.

Although the figures presented above are indicative of the percentage of weevil survival, it is recognized that the examinations were made at an insufficient number of points to give figures from which accurate conclusions may be drawn for the entire Cotton Belt.

PINK BOLL OR. (Pectinophora gossypiella Saund.)

exas Monthly Letter of the Bureau of Entomology, No. 167, March, 1928. Final arrangements have been made for the inauguration of a complete program of research on the pink bollworm, which has now become sufficiently abundant in western Texas to permit research investigations there.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fbb.)

orth J. H. Tenhet (April 14): Tobacco plant beds are being rather seriously injured in many localities around Chadbourn by the tobacco flea beetle.

lorida F. S. Chamberlin (April 14): Overwintered individuals are rather abundant at the present time in Gadsden County.

SUGARCANE

SUGARCANE BEETLE (Eutheola rugiceps Lec.)

ouisiana T. L. Holloway and W. E. Haley (April 2): The sugarcane beetle was found to be rather abundant in some fields on a plantation near New Orleans. The adults were killing the young plants of sugarcane in the manner which is characteristic of them, i.e., gnawing the stem just below the surface of the ground.

exas P. L. Thomas (April 10): J. N. Rovey writes that he has found numbers of the sugarcane beetles in the cornfields in Jefferson and Liberty Counties.

FOREST AND SHADE-TREE INSECTS

PERIODICAL CICADA (Tibicina septendecim L.)

ew Jersey R. H. Boyd (April 11): At the present time we have contemplated having our lawn dug up and reseeded, but under all of the trees there are innumerable little holes which we believe were caused by these little bugs. We have obtained a few specimens by digging at the roots of the trees but in other places where there were no roots it was impossible to procure the larvae as they penetrated the ground so deeply, consequently it would be impossible to exterminate them by ordinary methods. (The specimens were determined by W. L. Lintee as Tibicina septendecim L.)

ew York L. P. Felt (April 27): On April 19 we found cicada pupae mostly within four inches of the surface at Hunter Island, New Rochelle.

A Correction. In the note on periodical cicada in the Insect Pest Survey bulletin, Vol. 8, No. 2, April, 1928, p. 29, line 8, "Rockingham (1894 and 1911)" should be omitted.

WHITE-MARKED TUSsock MOth (Emerocampa leucostigma S. & A.)

New York

Cornell Dept. of Entomology News Letter (April 30):
Chautauqua County (G.H.Salisbury): Tussock-moth egg masses are fairly numerous in some orchards.

Ohio

E. W. Mendenhall (March 30): The cocoons of the white-marked tussock moth are very plentiful on shade trees along the streets and in the parks in Middletown and Hamilton.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (March 30): The cocoons of the bagworm are very plentiful in and about Middletown and Hamilton on evergreens, shade trees, and shrubbery. Boy scouts of Hamilton have been picking the bags and burning them.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

New York

Cornell Dept. of Ent. News Letter (April 30):
Suffolk County (C.D.Been): Oyster-shell scale seems to be very serious in most apple orchards.
Chautauqua County (G.H.Salisbury): Oyster-shell scale is plentiful but not dangerously so.

Nebraska

M. H. Swenk (January 1 to April 15): The Oyster-shell scale was complained of during the period covered by this report.

ARBORVITAE

AN APHID (Dilachnus thujaefolia Theob.)

Mississippi

R. W. Harned (April 24): Dilachnus thujaefolia Theob. on arborvitae was received from Leland March 24 and from Vicksburg March 27, being collected on arborvitae in both instances. The specimens were determined by A. L. Hamner.

BOXELDER BUG (Leptocoris trivittatus Say)

Nebraska

M. H. Swenk (January 1 to April 15): The boxelder bug was the cause of many inquiries and complaints from housekeepers during the period from February 6 to March 23. These complaints came from all over the eastern half of the State.

Kansas

J. W. McColloch (March 31). The boxelder bug is still causing trouble as a household pest at Atchison, Bennington, and Kirwin.

DEODOR

WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (April 24): A number of complaints in regard to weevils belonging to the genus Pissodes have been received during

the past few weeks. In each case Cedrus deodara plants have been injured. Specimens were received early in April from Leakesville and Starkville,, which were identified as possibly P. deodarae Hopk.

ELM

ELM SCURFY SCALE (Chionaspis americana Johns.)

M. H. Swenk (January 1 to April 15): Chionaspis americana has been complained of during the period covered by this report.

FIR

DOUGLAS FIR CATERPILLAR (Euschausia argentata Pack.)

G. G. Schweiss (April 17): An undetermined species of lepidopterous larva was found on firs and to a somewhat lesser extent on pine in the district near Lake Tahoe, and neither Mr. Doten nor I have ever seen them before. According to the man who brought them to us, they are very numerous and are doing considerable damage to young firs. (Determined by C. Heinrich).

E. O. Essig (April 2): Nearly full-grown caterpillars of the silver spotted Helisidota are defoliating young Douglas fir trees along the Noyo River, near Fort Bragg, Mendocino County.

MAPLE

WALNUT SCALE (Aspidiotus juglans-regiae Comst.)

E. W. Mendenhall (April 24): I find the soft maple and some other kinds of shade trees in Columbus infested with the walnut scale.

SPRUCE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

M. H. Swenk (January 1 to April 15): From the middle of February to early April at least the usual number of complaints relative to injury to evergreens, especially spruces, by the pine leaf scale were received.

WILLOW

SCURFY SCALE (Chionaspis furfura Fitch)

E. W. Mendenhall (April 24): I find a planting of willow trees in Kenia, Greene County, infested with the scurfy scale, giving the bark a whitish appearance.

M. H. Swenk (January 1 to April 15): The willow scale was complained of during the period covered by this report.

GREENHOUSE AND ORNAMENTAL
PLANTS AND LAWNS

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

North
Carolina

R. W. Leiby (May 4): This insect became established in Wilmington within the last four years. It was commonly complained of last year, being destructive to the point of killing large ornamental broad-leaved evergreens. Vedalia lady beetles were procured from California in February, and their larvae bred in the laboratory and released on infested shrubbery. A complete generation of the beetles has developed this spring out of doors.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Maryland

J. A. Hyslop (April 3): The work of what appears to be this insect was found on several twigs of Stranvaesia davidiana in my garden.

WHITEFLIES (Aleurodidae)

Georgia

O. I. Snapp (April 19): As usual these insects are numerous on ornamentals at Fort Valley at this season of the year, necessitating the enforcement of control measures.

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

Ohio

E. W. Mendenhall (April 11): I find oviposition scars of Oecanthus niveus DeG. on various shrubs and trees in many localities in central and southwestern Ohio. While they are beneficial there is some danger of fungus getting into the scars made by them.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Mississippi

R. V. Harned (April 24): Specimens of the chrysanthemum gall midge were found injuring chrysanthemum plants at Greenville April 5. This insect has been intercepted from many shipments of chrysanthemum plants from northern States, especially from Ohio this spring.

LILY

BULB MITE (Rhizoglyphus hyacinthi Boisd.)

Nebraska

L. H. Swenk (January 1 to April 15): During March the bulb mite was found doing severe injury in two greenhouses, one at Lincoln and the other at Kearney.

Washington

C. F. Doucette (April 26): Approximately 500 plants of a total of 5,000 Easter lilies, Lilium longiflorum giganteum, in a greenhouse near Seattle had to be discarded because of injury by the bulb mite. This was evidenced by a slight wilting of the foliage and a yellow-

ing of the leaf tips. The mites could be found inside the stems an inch or two above the soil surface and from this region in most cases a browned streak could be traced down into the bulb to its base, which area appeared more or less rotted and populated somewhat with mites. Preliminary cultures by plant pathologists have not revealed any organisms in these brown rotted portions which can be considered responsible for the injury and accordingly the mites are considered the primary cause. These bulbs were imported from Japan in 1927. Other lots being forced in greenhouses in this section have also shown some losses, but figures were not obtained. The bulb mite has also been encountered frequently in plantings of lilies of several species being grown outside in western Washington.

2 BYRRHID BEETLE (Amphicyrta chrysomelina Er.)

regon

Don C. Mote (April 18): Larvae of this byrrhid were found doing damage to lilies, clover, and grasses by Wilcox on April 11.

ROSE

POTATO APHID (Illinicia solanifolii Ashm.)

Mississippi

R. W. Harned (March 28): Macrosiphum rosaeifolium has been collected on rose from Lumberton March 28.

LAWNS

EARTHWORMS (Lumbricus sp.)

Illinois

W. P. Flint (April 18): Numerous reports of damage to lawns by earthworms have been received.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MOSQUITOES

MOSQUITOES (Culex sp.)

North Carolina

J. M. Tenhet (April 12): Mosquitoes are unusually abundant at Chadbourn for this season of the year and are remarkably vicious.

HOUSE FLY (Musca domestica L.)

South Central States

F. C. Bishopp (April 16-26): A single specimen of house fly observed in a restaurant at Topeka, Kansas (April 16), was the only one seen during this period (April 16-26) at a number of points visited in Kansas, Iowa, Minnesota, North Dakota, South Dakota, and at Omaha, Nebraska.

Washington, D. C. F. C. Bishopp (April 30): There was a slight increase in the number of house flies in this vicinity during April.

FLEAS (Stenocephalus felis Bouche
and Stenocephalus canis Curtis)

Illinois W. P. Flint (April 18): Judging by the number of letters received, these insects have been more abundant than usual at this time of the year. All of the specimens received have been the common cat and dog fleas. The infestations have apparently originated about farm buildings, mainly barns and feed lots.

CHIGGER (Trombidium irritans Riley)

Louisiana F. C. Bishopp (April 26): A report has been received that chiggers are causing annoyance in this vicinity (New Orleans).

HORSES

BUFFALO GNAT (Simulium pecuarum Riley)

Mississippi G. H. Bradley and T. E. McNeel (April 24): During the past two weeks a destructive outbreak of this insect occurred in Tallahatche County. On this date the number of gnats is greatly reduced, but they are still annoying livestock. Approximately 100 head of horses and mules have been killed as a result of the outbreak. No death losses of cattle appear to have occurred.

CATTLE

LONG-NOSED OX LOUSE (Linognathus vituli L.)

Nebraska M. H. Swenk (January 1 to April 15): Early in February a Lancaster farmer reported a heavy and severe infestation of his calves with the long-nosed cattle louse, Linognathus vituli L.

North Dakota F. C. Bishopp (April 22-24): Infestations of this louse were found on calves at Grand Forks (April 22), Fargo (April 23), and at James town (April 24), an exceedingly heavy infestation was observed.

NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)

COMMON CATTLE GRUB (Hypoderma lineatum DeVill.)

Minnesota F. C. Bishopp (April 19-21): Both species were found infesting cattle at Fairbault, St. Paul, and Duluth. The heaviest infestation was observed at Fairbault where 71 grubs were found in a yearling and several animals in this herd were thought to be made unthrifty by the parasites. Some grubs (both species) were mature and others (H. bovis) were just reaching the subdermal tissues.

North Dakota F. C. Bishopp (April 22-24): I failed to find a single cattle grub in native cattle at Grand Forks and Fargo. This shows that these

insects have not established themselves since examinations which were made in this region ten years ago. A light infestation was found in herds at Jamestown (April 24).

F. C. Bishopp and R. A. Roberts (April 18): Various stages of the northern cattle grub were found in a dairy ^{herd} at Ames; the infestation, however, was comparatively light. Both species were present.

F. C. Bishopp (April 26): An exceedingly light infestation of Hypoderma bovis was observed in the many herds in the vicinity of Omaha. The larvae were in various stages of development. All larvae of Hypoderma lineatum had apparently emerged.

SCREW WORM (Cochliomyia macellaria Fab.)

E. W. Locke (April 30): Screw worm flies have greatly increased in numbers during the month at Dallas, and now (April 30) constitute the dominant species about the local packing house.

HORN FLY (Haematobia irritans L.)

F. C. Bishopp (April 30): Horn flies were found on dairy cattle in comparatively small numbers for this date, averaging about five per head.

HOGS

HOG MANGE MITE (Sarcoptes scabiei suis DeG.)

F. C. Bishopp (April 25): A number of hogs were observed in the vicinity of Aberdeen to be moderately infested with hog mange.

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

J. R. Douglass (April 21): Complaints have been received from sheepmen and inspectors that the sheep botfly was causing injury in the central part of the State. Cool weather at lambing time with very little green grass is probably a factor in the loss of ewes.

POULTRY

BLOOD SUCKING CONENOSE (Triatoma sanguisuga Lec.)

E. V. Walter (April 4): This insect was reported as attacking poultry, particularly a setting turkey hen.

CHICKEN BODY LOUSE (Menopon stramineum Nitz.)

F. C. Bishopp (April 22-24): Moderate to heavy infestations were found in every flock examined at Grand Forks April 22, Fargo April

23, and Jamestown April 24. Other species of chicken lice were comparatively few.

A HEN FLEA (Ceratophylus sp.)

Massachusetts F. C. Bishopp (April 16): An infestation of a henhouse and poultry runs at Dorchester by the eastern hen flea has been reported. The fleas are said to be very annoying to people who enter the poultry house.

HOUSEHOLD AND STORED-PRODUCT

INSECTS

TERMITES (Reticulitermes sp.)

Kansas J. W. McColloch (March 2): Termites have ruined stationery and supplies in the City Clerk's office at Wellington. (April 10): Woodwork in two sorority houses at Manhattan has been seriously injured. Damage to woodwork in houses is also reported in Atchison, St. George, Wichita, Meade, and North Topeka. The ~~granite~~ floor in the public school at Chetopa has been undermined. Injury to trees, especially cherries, by termites has been reported from Bucklin, Durich, Florence, LaCrosse, and Meade.

Mississippi K. L. Cockerham (May 1): Reticulitermes virginicus Banks continues to damage buildings in Biloxi. Reports come in nearly every day concerning these insects.

A TERMITE (Kaloterms piceatus Sny.)

Hawaiian Islands Monthly Letter of the Bureau of Entomology, No. 167, March, 1928. Dr. T. E. Snyder reports that interceptions of the dry-wood termite Kaloterms (Cryptoterms) piceatus Sny., in 1927 at the port of Honolulu, Hawaii, probably establish China as its original habitat, termites of this species having been discovered in household articles of Chinese passengers from China. This termite has been known to occur in the Hawaiian Islands only since 1904. It is found at Honolulu (on Oahu) and at Hilo (on Hawaii).

CLOVER MITE (Bryobia praetiosa Koch)

Nebraska M. H. Swenk (January 1 to April 15): Shortly before the house-keepers were relieved of the boxelder-bug invasion in their houses during February and March, the clover mite became very annoying in houses. Many complaints were received about these mites from all parts of this State from March 20 to April 15.

RAT MITE (Liponyssus ~~ssus~~ bacoti Hirst)

h
rolina C. H. Brannon (April 5): This species is causing serious trouble in one of the common cotton mills at Concord. The mites are found all over spools of yarn and machinery, crawling on the mill workers and causing painful bites. The mill owners were desperate and thinking of closing down until something could be done. (Determined by H. E. Ewing).

A COCKROACH (Archimandrita marmorata Stoll)

achusetts A. I. Bourne (April 21): Within the last two or three days we received a sample of a giant cockroach, Archimandrita, probably marmorata, which was sent in to us by a correspondent from Middlesex County with a report that it was collected in bananas in a market in that section.

A POWDER POST BEETLE (Lyctus planicollis Lec.)

issippi K. L. Cockerham (May 1): Severe damage from this insect was found in one of the hardware stores in Biloxi on April 28. These insects were damaging hammer, hatchet, ax, and hoe handles which were in stock. Adult beetles were collected at the time.



THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MAY, 1928

The season in the eastern United States, as indicated by insect appearance and prevalence, is still from two to three weeks late. A most interesting development in this connection, however, has come to our attention. It appears that in Nova Scotia insect development is nearly three weeks earlier than it was last year, and the Nova Scotia Fruit Growers' Association is recommending late treatment for the red mites and bud moth accordingly.

White grubs in general seem to be less prevalent than last year. A rather large brood of beetles was emerging early in the month in the Middle Atlantic, East Central, and eastern part of the West Central States.

Reports of unusual wireworm injury have been received from the New England, East Central, and West Central States.

Cutworms appear to be less prevalent than at this time last year over the New England, South Atlantic, and North Central States.

The Hessian-fly situation, on the whole, seems to be favorable. Reports from Indiana, Kansas, and Nebraska indicate moderate and spotted infestations.

A survey carried on in Illinois indicates that but little damage is to be anticipated from the chinch bug this year.

Green-bug infestations seem to be quite general throughout central Kansas, but the infestations are not serious and but little damage has been experienced.

A rather unusual outbreak of leafhoppers has developed in the wheat fields of southern and western Nebraska.

Billbugs are attracting considerable attention on corn in parts of North Carolina, Ohio, Indiana, and Missouri.

Early in the month damage to alfalfa by the pea aphid was reported from Indiana, Kansas, and Utah.

The lesser clover leaf weevil is again appearing in threatening numbers in the clover-seed producing section of Illinois.

The aphid situation reported in the last number of the Survey Bulletin has not materially changed, aphids remaining unusually scarce throughout the Middle Atlantic, New England, and East Central States and the Pacific Northwest. These insects are reported, however, as more abundant than usual in the Fort Valley section of Georgia.

Codling-moth emergence, on the whole, is much later than usual throughout the Middle Atlantic and East Central States.

The eastern tent caterpillar is reported as subnormally to normally abundant throughout the New England and Middle Atlantic States, damage so far being very slight throughout this region. Parasitism, in comparison with conditions last year, has substantially increased in New England.

The San Jose scale suffered very high mortality in southern Indiana.

The European red mite appears to have survived the winter very successfully, and present indications are that infestations this year will be as severe if not more severe than last year throughout the New England and Middle Atlantic States.

The pear psylla is appearing in normal abundance in New England and New York State.

Diphadnus californicus occurred in very unusual numbers in Benton County, Washington, where it stripped the foliage from 120 acres of pears.

The oriental fruit moth started emerging during the first week of May in New York and Ohio. In the Georgia fruit belt this insect is very scarce this year. Its relative abundance has not yet been ascertained over the rest of its range.

Although the plum curculio was observed 6 days earlier than in 1927 in Massachusetts it is later than usual throughout the greater part of its eastern range. In Georgia it is 25 days behind its normal schedule.

An intensive campaign to eradicate the citrus whitefly which was recently found in a nursery in California is now under way.

The cabbage curculio is doing very serious damage in Kansas and Nebraska. One grower near Omaha lost 10,000 young cabbage plants as a result of the attack of this insect, and this is the first serious report recorded from this State.

The asparagus beetle appears to be normally abundant throughout the New England and East Central States. It is apparently spreading slowly westward and southward, having been found for the first time as far south as Carbondale, Illinois, this spring.

The Mexican bean beetle made its appearance in the field in North Carolina on May 21 and in Alabama on April 12. Up to the 15th of May, only 1.8 per cent of the beetles had emerged in the hibernation cages at Birmingham.

The striped cucumber beetle is now seriously infesting cucurbitaceous plants in the lower Mississippi Valley.

An insect tentatively determined as Chilo simplex Butl. has been reported from the Island of Oahu in the Hawaiian Islands. This is a well-known rice pest of the Orient, where it is effectively controlled by an egg-parasite.

Brood II of the periodical cicada is emerging according to schedule throughout the Middle Atlantic region, reports having been received from New York, New Jersey, Pennsylvania, Virginia, and North Carolina. The Virginia records are more extensive and complete than for any previous appearance of this brood.

The elm scurfy scale is being reported in unusual abundance in the East Central and North Central States and in Nebraska.

The pine leaf miner is becoming rather troublesome in eastern Massachusetts and Rhode Island. In some localities the trees are already brown from infestations from this pest.

Argyroploce abietana is being reported from northern and western Michigan and it seems to be increasing throughout the entire State.

Damage by termites is being reported from Indiana and Kansas.

GENERAL FEEDERS

WHITE GRUBS (Phyllophaga spp.)

- Massachusetts A. I. Bourne (May 21): The first specimens of May beetles were observed on May 12. However, as yet they are not present in any abundance.
- Pennsylvania H. N. Worthley (May 11): Adult beetles turned up in plowing during the last week in April at State College, appearing in small number by May 1. Abundant about light by May 10.
- Indiana J. J. Davis (May 5): White grubs have been reported abundant in soil at New Carlisle, LaGrange, Washington, and Lagro.
- Iowa H. E. Jaques (May 8): I have just returned from a trip through some ten or twelve counties in southeastern Iowa and found evidence of damage from the white grubs very apparent, particularly to blue grass throughout much of the region. The cold weather has deferred the flight of May beetles this year. They were first out on the night of May 1. The following night there was a rather heavy flight but only scattered individuals have been seen since. (May 29): White grubs of Brood A are found to be still active in some of the corn fields and reducing the stand.
- Missouri L. Haseman (May 24): June beetles have been unusually abundant during the month; on the other hand, larvae seem less abundant than a year ago and practically no farmers have complained of them.

WIREWORMS (Elateridae)

- New York Weekly News Letter, N. Y. State College of Agriculture, May 28, 1928. Wayne County (E. E. Frane): Wireworms are numerous, as many as 35 having been found around a single cabbage plant.
- Rhode Island A. E. Stene (May 23): Wireworms have been destructive to sweet corn in some sections of the State, as many as 10 to 20 grubs to a hill being quite common. One grower reports that birds are digging up hills and eating worms but leaving the sprouted corn.
- Indiana J. J. Davis (May 26): Wireworms were reported destructive to corn near Liberty, May 21.
- Missouri L. Haseman (May 24): Next to corn billbugs and flea beetles, the wireworms have been the most troublesome pest attacking the young corn.

ansas J. W. McColloch (April 18): Wireworms are reported injuring corn on very rich bottom ground at Wheaton.

CUTWORMS (Noctuidae)

Massachusetts A. I. Bourne (May 21): The black army cutworms Agrotis fennica Tausch. and A. unicolor Walk., which were especially injurious to early vegetables at this time last year, are very scarce in this vicinity this spring (Amherst).

Connecticut M. P. Zappe (May 22): Cutworms are causing considerable injury to opening grape buds. In many cases fruit-bearing shoots have been entirely eaten away, at South Glastonbury.

W. E. Britton (May 24): Cutworm injury reported to me by Mr. A. E. Wilkinson, Vegetable Extension Specialist. Several growers are using bait of poisoned-bran mash. Reported from Canterbury, Norwich, Brooklyn, Killingly, Hampton, and Woodstock.

North Carolina R. W. Leiby (May 4): Correspondence indicates that garden cutworms are more destructive than usual.

Indiana J. J. Davis (May 26): The glassy cutworm, Hadena devastatrix, was reported damaging Delphiniums at Tipton May 21.

Michigan R. H. Pettit (May 19): Some kind of a cutworm has recently appeared at Hart and at East Lansing. It works on asparagus from the level of the ground down for about 4 inches and above ground for 2 or 3 inches, gnawing deep pits and ruining the sprouts. It is serious enough to have practically destroyed 2 acres of asparagus in one field. A goodly quantity of these larvae are now in a cage awaiting development into the adult condition.

Missouri L. Haseman (May 24): Fewer complaints than usual have been received from farms regarding cutworms. This season has apparently not been favorable for cutworm injury.

Mississippi R. W. Harned (May 29): Cutworms tentatively determined by Mr. J. M. Langston as Lycophotia margaritosa were collected on cabbage plants at Lexington May 11, and on sweet potato plants at Oxford May 21. Very little damage has been caused. Feltia malefida were also collected in corn and soybean fields at Yazoo City April 26. Little or no damage was noted at this time.

California J. C. Elmore (May 25): Cutworm damage has been noticeable this year but very much less than last year at Garden Grove, Orange County. Land that was flooded last year was very heavily infested with cutworms. This year the same land was lightly infested.

CEREAL AND FORAGE - CROP INSECTS

WHEAT WIREWORM (Agriotes mancus Say)

- Maine J. H. Hawkins (May 7): It is interesting to note that our usually most destructive species, Agriotes mancus Say, was not nearly so abundant during 1927 as during 1928, while an upland type, Melanotus sp., was more abundant than usual.
- In one locality A. mancus was very abundant during a warm spell in April and was present until corn was planted in June. After a wet cold spell during June the numbers were greatly diminished and they did not appear in quantities great enough to do much damage during the season. We have been at some loss to account for this disappearance unless some sort of a fungus disease may have killed the larvae. Material kept in flower-pots was not affected either by animal or fungus parasites and no evidence of either was found in the fields.

A FLEA BEETLE (Chrysomelidae)

- Indiana J. J. Davis (May 26): A small black undetermined species of flea beetle was reported damaging corn at Connersville, Fayette County, May 24.
- Missouri L. Haseman (May 24): A small black flea beetle, not yet identified, has been attracting attention throughout the northern half of the State, where it is working great destruction on the young corn.

CONVERGENT LADYBEETLE (Hippodamia convergens Guer.)

- Oregon Don C. Mote (May 11): Ladybird beetles, Hippodamia convergens Guer., are reported by Mr. Thompson, Mr. Wilcox, and others as being unusually abundant and widely disseminated.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Louisiana T. E. Halloway and W. E. Haley (May 17): Large larvae of Laphygma frugiperda were found injuring young corn in St. Charles Parish.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Indiana J. J. Davis (May 26): Received report with specimens of wheat heavily infested with spring brood of fly, larvae and flaxseed being present and as many as 16 being found to a single stalk. Ten acres sowed the last week in September badly infested. Remaining 25 acres sowed later (after October 1) was reported apparently uninjured.

W. P. Flint (May 17): Eggs of the Hessian fly were found in considerable numbers in wheat fields during the week of April 22, in central Illinois. Flies were observed ovipositing at several points in the State during this week.

Winter wheat has been killed out to such an extent that in many localities there will not be a field of winter wheat for several miles. This possibility will have some effect in reducing numbers of the fly next fall.

J. W. McColloch (May 22): Dr. E. G. Kelly tells me that in his work over the State he finds that there is quite a bit of infestation by the Hessian fly, but that the infestation is spotted, due probably to the snows and sudden drops in temperature in April.

M. H. Swenk (April 15-May 15): Reports from Saunders County received early in May indicate that there is a general, but not heavy, infestation with the Hessian fly in that county this spring.

CHINCH BUG (Blissus leucopterus Say.)

J. H. Bigger (May 11): Surveys in several counties indicate generally slight damage to be expected in the central part of the State. Occasional fields show enough bugs to cause local damage. Adults are flying.

GREEN BUG (Toxoptera graminum Rond.)

J. W. McColloch (May 22): There seems to be a general infestation of the green bug throughout central Kansas, but there has been very little actual injury. A few fields in the neighborhood of Lindsburg are reported to have suffered some loss.

LEAFHOPPERS (Deltoccephalus balli Van D. and Acallia sanguinolenta Prov.)

M. H. Swenk (April 15-May 15): From southwestern Nebraska reports have been received during late April and early May of an abundance of leafhoppers in the winter wheat fields. The attack of these insects, supplemented by the effects of the prevailing dry weather, has resulted in considerable damage in some fields, even to some loss of the plants. In Keith County the prevailing species was found to be Deltoccephalus balli. In Hitchcock County the prevailing species was Acallia sanguinolenta.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Corn Borer Control Extension Service (May 12): They have the corn borer way out where Guam is and have recently imported

1,700 parasites reared as far as the spin-up stage in the laboratory at Monroe, Mich. These parasites (Exeristes roborator Fab.) withstood the long journey in cold storage, arrived in good condition, and on emergence were liberated in the infested fields of the island, reports Dr. Philip Luginbill, in charge of the Monroe Laboratory.

CORN EAR WORM (Heliothis obsoleta Fab.)

Mississippi

H. L. Cockerham (May 26): This insect was found damaging corn about the 10th of May and on May 23rd was found injuring tomatoes. Earlier in the season this species did some damage to gladiolus blossoms at Biloxi.

P. K. Harrison (May 17): Numerous complaints have been received but damage has been slight except in 1 five-acre field and 1 1-acre field of beans at Picayune. In these two fields the damage was rather heavy.

Louisiana

W. E. Hinds (May 28): The occurrence of Heliothis obsoleta is much more rare in fields of corn this season than in 1927. There has been practically no complaint of this insect attacking tomato fruit as usually occurs at this season.

ARMYWORM (Cirphis unipuncta Haw.)

Indiana

J. J. Davis (May 26): L. F. Steiner reported the collection of 50 or 60 armyworm moths in his codling-moth bait-pans at Bedford May 22.

SOD WEBWORMS (Crambus spp.)

Indiana

J. J. Davis (May 26): Webworms have been very destructive to corn from reports and specimens received between May 17 and present date from Union, Fayette, Boone, Henry, and Carroll Counties.

Iowa

H. E. Jaques (May 29): Sod webworms are also damaging corn in sod ground broken last year.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

Kansas

J. W. McColloch (April 28): Seed corn maggots are reported as destroying an entire field of corn at Burlington.

SUGARCANE BEETLE (Eutheola rugiceps Lec.)

Louisiana

W. E. Hinds (May 28): The rough headed corn stalk beetle has done serious injury to stands of corn and cane, especially in the southern part of the State. This pest seems to be increasing its range and destructiveness from year to year. It damages rice also.

- Texas F. L. Thomas (May 10): Adult sugarcane beetles were destroying corn on well drained land which has been in cultivation many years at College Station.
- A WIREWORM (Monocrepidius lividus DeG.)
- North Carolina J. N. Tenhet (May 14): A one-eighth acre field of corn slightly damaged at Chadbourn.
- CORN BILLBUGS (Sphenophorus spp.)
- North Carolina J. N. Tehnet (May 16): One 10-acre field at Chadbourn damaged by the curlew bug, Sphenophorus callosus Oliv., over 50 per cent necessitating replanting. Other near-by fields, totaling 25 or 30 acres, damaged from 10 to 25 per cent.
- Ohio T. H. Parks (May 24): Sphenophorus zeae Walsh is destroying fields of corn in several central Ohio counties. Damage is confined largely to fields in timothy sod last year. Some farmers have replanted because of the damage which began about May 15.
- Indiana J. J. Davis (May 26): During the past week serious losses have resulted to corn from the billbug (Sphenophorus zeae, Satterthwait det.). The first reports came May 18 and have continued to date. The localities where heavy infestations occur include the following counties, Tippecanoe, Carroll, Boone, Clinton, Howard, Tipton, Madison, Fayette, Wayne, Fountain, Union, and Johnson. Specimens were received from all of these counties and all were S. zeae. The dying out of clover a year ago seems to be the indirect cause of this trouble because in practically all cases corn fields infested this spring had a heavy stand of timothy in 1927 after the clover died out.
- Iowa H. E. Jaques (May 29): Billbugs of at least two species Sphenophorus parvulus and S. zeae, are causing considerable damage to corn in Henry and Lee Counties.
- Missouri L. Haseman (May 24): A great many farmers have complained of billbugs the last half of the month in central and northern Missouri. Calendra zeae was unusually destructive during the last half of the month in central and northern Missouri. Calendra parvula Gyll. was unusually destructive during the last half of the month in central and northern Missouri.
- CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)
- Ohio T. H. Parks (May 24): Corn flea beetles have been discovered on young corn and have badly damaged the first planting on fields preceded by timothy sod. Some corn will have to be planted over in some of the central counties. Beetles more abundant than in an average year.

A CARABID (Scarites subterraneus Fab.)

Texas J. N. Rovey (April 25): The grub of this insect was found attacking seed corn after being planted near Beaumont.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Illinois J. H. Bigger (April 30): Damage to corn is not expected to be very great this season in the western part of the State. Weather has permitted all ground to be plowed early. Control was obtained by farmers without their definite knowledge in most cases.

ALFALFA AND CLOVER

PEA APHID (Illinoia pisi Kalt.)

North Carolina C. H. Brammon (May 21): This insect has completely destroyed about 15 acres of vetch in Moore County.

Indiana J. J. Davis (May 26): The pea aphid was reported as widespread and destructive to alfalfa in Elkhart County. Much damage had already been done when reported May 23. The same aphid was reported May 21 from LaGrange County. In both cases alfalfa was the crop attacked.

Wisconsin J. E. Dudley Jr. (May 26): The pea aphid is slightly more abundant than the average year for this time of the year. There were 5,600 aphids collected by aphidozer from 7,500 sq. ft. of alfalfa in Columbia County. Coccinellids were abundant, 33 being collected with the aphids, and probably not more than half recovered. Syrphids were very few, Chrysopids just appearing, and Nabis fesus light. From April to May 21, 245 coccinellids, practically all Adalia bipunctata, were collected in the summer laboratory, where they were attempting to escape. Many were also observed in outbuildings which were not tight enough to prevent gradual escape of the insects.

Kansas J. W. McColloch (May 20): The pea aphid caused considerable damage to alfalfa following freezes in April. Reports of injury were received from McFarland, Abilene, Maple Hill, Wellington, Wichita, and Manhattan. On May 16 injury to clover was reported from Olathe.

Utah G. F. Knowlton (May 10): Pea aphids are becoming rather abundant on alfalfa throughout Salt Lake, Weber, and Cache Counties.

LESSER CLOVER LEAF WEEVIL (Phytonomus nizrirostris Fab.)

Illinois

J. H. Higger (May 15): Observations at present indicate that there will be severe losses of clover seed caused by the lesser clover leaf weevil.

SALT-MARSH CATERPILLAR (Estigmene acraea Drury)

Texas

F. L. Thomas (May 3): These worms are quite numerous now and are almost sure to work on cotton later in the region around Bay City, Matagorda County.

THRIPS (Thysanoptera)

Wisconsin

J. E. Dudley, Jr. (May 26): These insects are extremely abundant on alfalfa, over 14,000 having been caught with the aphidozer from 7,500 sq. feet of alfalfa in Columbia County.

Mississippi

R. W. Harned (May 29): Injury to roses by thrips has been prevalent throughout the State this spring.

ARMY CUTWORM (Chorizaerotis auxiliaris Grote)

Kansas

J. W. McColloch (April 25): The army cutworm was reported injuring alfalfa in a number of fields at Rydal.

F R U I T . I N S E C T S .

APPLE

APHIDIIDAE

Massachusetts

A. I. Bourne (May 21): Up to the present time there are apparently very few orchard plant lice. I reported this fact in my letter and have had no report thus far from any section of the State to contradict the statement.

Connecticut

M. P. Zappe (May): Very few aphids can be found anywhere except in one orchard in Unionville County. This orchard has a good infestation of aphids started. Second generation being produced. Less abundant than in an average year.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State College of Agriculture, May 14, 1928: Reports from Suffolk, Columbia, Chautauqua, Fredonia, Erie, Genesee, and Niagara Counties indicate that aphids in general are extremely scarce, the few observed being the apple grain aphid.

Georgia

Oliver I. Snapp (May 19): Aphids are more abundant this year than usual at Fort Valley. Our spring has been cool with much rain.

- Ohio T. H. Parks (May 24): Plant lice are quite scarce on vegetable and fruit trees thus far this spring.
- Indiana J. J. Davis (May 5): Apple aphids were abundant early; they seem to have been fairly well checked in most orchards, although in some orchards they are threatening.
- Bennet A. Porter (May 19): Apple aphids have been only moderately abundant thus far this season in the vicinity of Vincennes.
- Illinois W. P. Flint (May 17): Aphids continue to be very scarce in nearly all of the apple orchards of the State. There has been a slight increase during the past two weeks.
- Oregon Don C. Mote (May 11): Apple aphids reported by Mr. Wilbur to be late in making their appearance. Very few of them noted up to May 8.

APPLE APHID (Aphis pomi DeG.)

- New Jersey D. W. Webb (May 21): The apple aphid was reported on rose, apple, etc., at Pennington.
- Indiana Bennet A. Porter (May 19): Green apple aphids have been present since the buds opened in the vicinity of Vincennes.

ROSY APPLE APHID (Anuraphis roseus Baker)

- New York C. R. Crosby (May 12): In western New York the actual number of stem mothers is rather low, but when compared with the other species (grain and green) the percentage is high. In the Hudson Valley the number of rosy aphids is rather low.
- Indiana Bennet A. Porter (May 19): The rosy apple aphid was first observed on May 15, and a few light infestations have been observed since in the vicinity of Vincennes.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausz.)

- Missouri L. Haseman (May 24): During the week of May 20 some young apple orchards in central Missouri showed severe infestation of the woolly aphid, particularly on the trunks and limbs.
- Mississippi R. W. Harned (May 29): Specimens of this insect were collected at Holly Springs April 17. and May 9, and on apple from Kosciusko May 10.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

- New York Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928. Columbia County (A. B. Buchholz): Aphids on apples can be found on close examination, but they are not plentiful and are mostly the grain aphids.

Indiana Bennet A. Porter (May 19): Light infestations of the apple grain aphid in the vicinity of Vincennes.

CODLING MOTH (Carpocapsa pomonella L.)

New York Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928, Chautauqua County (G. H. Salisbury): None of the codling moth larvae observed have yet begun the pupal stage, although it is about time.

Ohio T. H. Parks (May 24): Moths commenced to emerge at Chillicothe May 18, and at Delaware May 21. Very few have emerged at this date (May 24):

Indiana J. J. Davis (May 5): Codling-moth emergence will be much later than usual according to present indications. (May 26): The first moths issued at Bedford in the southern part of the State May 16, according to the record of L. F. Steiner. The first eggs were observed May 17. None had hatched to date and there may be a few days delay from normal because of the cool weather prevailing the past few days.

Bennet A. Porter (May 19): On account of the general lateness of the season, codling-moth emergence is unusually late this year, although with reference to apple blooming emergence is about on schedule. The first moths appeared in the insectary at Vincennes on May 14.

Illinois W. P. Flint (May 17): The codling moth started emerging in southern Illinois in Mr. Chandler's cages on May 9, and in out-of-door cages in central Illinois on May 13. Eggs were found on apple in central Illinois on May 16. Weather conditions, on the whole, have been favorable to egg laying since the start of moth emergence.

Georgia E. Lee Worsham (May 21): Codling moths are emerging rapidly and have commenced laying eggs. The eggs are expected to hatch about May 12 to 14. The peak of spring brood egg deposition is expected between May 15th and 20th, this year. The Georgia State Board of Entomology is planning to introduce about 400,000 egg parasites, Trichogramma minutum Riley, from California in time to catch the peak of egg deposition.

Missouri L. Haseman (May 24): The first adult codling moths emerged on practically the same date in southern Missouri, central Missouri, and northwestern Missouri, namely, May 9 and 10. In southwestern Missouri they are emerging slowly, with the likelihood of a long-drawn-out emergence. At Columbia 50 per cent of the moths were out by May 21. In northwestern Missouri on the same date only 14 per cent of the moths emerged. The first eggs at Columbia were observed on the 17th, and in west-central Missouri fresh eggs were collected on the 20th. On the 24th no eggs had hatched.

Washington

E. J. Newcomer (May 26): The weather at Yakima during May has been warmer than any May for some years, the maximum temperatures for the last three weeks have ranged from 75 to 98, and as a result, codling moths have been emerging in large numbers and egg deposition is much heavier than usual. This may result in a higher percentage of wormy apples this fall than normal.

FRUIT TREE LEAF ROLLER (Archips argyrosoila Walk.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, New York State College of Agriculture, May 14, and May 28, 1928: During the first week in May leaf rollers were observed hatching in Columbia, Greene, Ontario, Wayne, Monroe, and Niagara Counties, and were found in abundance in Broome, Onondaga, and Chautauqua Counties by last of May.

CIGAR CASE BEARER (Coleophora fletcherella Fern.)

New York

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Genesee County (R. L. Payne): The cigar case bearers are present in large numbers in a few orchards and have been causing some injury to the young foliage.

PISTOL CASE BEARER (Coleophora malivorella Riley)

New York

C. R. Crosby (May 12): Pistol case bearers are appearing on the buds generally throughout the State in a little more than the usual numbers. In Onondaga County they are abundant in one cherry orchard.

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Erie County (M. N. Taylor): There was a considerable infestation of pistol case bearers on apple this year.

CASE BEARERS (Coleophora spp.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14 and May 28, 1928: Reports from Genesee, Broome, and Monroe Counties indicate that case bearers are threateningly abundant. Reports of their presence have also been received from Fredonia and Columbia Counties.

EYE-SPOTTED BUD MOTH (Spilonota ocellana Schill.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928. Reports from Ontario, Onondaga, and Ulster Counties indicate that severe injury has already been done by this insect. Damage is anticipated in Monroe County, and the insect is also reported from Erie and Columbia Counties.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts

A. I. Bourne (May 21): The eastern tent caterpillar, as the season advances and the insect becomes conspicuous, does not appear to be quite so abundant as last year throughout the State as a whole. We again made some observations on the rate of parasitism for the section around the college and from a total of 8,000 eggs which were examined we found a parasitism of between 12 and 13 per cent. This is a substantial increase over the degree of parasitism which was observed last year.

John V. Schaffner, Jr. (May 24): First hatch of tent caterpillars reported at Melrose on April 8. Hatching not general until about two weeks later. Infestations spotty. Abundant in some localities, especially in neglected orchards and on wild black cherry.

Connecticut

W. E. Britton (May 24): Tent caterpillar nests fairly abundant in some localities and rather scarce in others. Reported from New Haven, less abundant than in an average year.

Rhode Island

A. E. Stene (May 23): The season in Rhode Island has been cold and backward and insect development has been slow. Tent caterpillars hatched 10 days or two weeks ago in some parts of the State but in other sections near the ocean they are just beginning to hatch. In no case have they become very active. A normal occurrence of the tent caterpillars may be expected.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, New York State College of Agriculture, May 14, and 28, 1928: Eastern tent caterpillar eggs were hatching the first and second weeks in May and the larvae are now getting back into the large crotches of the trees. Reports have been received from Chautauqua, Ontario, and Genesee Counties.

New Jersey

D. W. Webb (May 18): Damage slight at present, but tents seemingly numerous again this year.

Mississippi

R. W. Harned (May 29): Injury to plum and cherry by Malacosoma americana was reported from Tate County April 19 and 24.

CANKERWORMS (Geometridae)

Kansas

J. W. McColloch (May 11): Defoliation of fruit and shade trees by cankerworms is reported from Lincoln.

SPRING CANKERWORM (Paleacrita vernata Peck)

New York

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Orange County (Sidney Jones): A larva of the spring cankerworm was found on May 7.

Pennsylvania H.N. Warthley (May 12): Eggs laid on apple twig on April 19. Hatched May 11. Larvae invading opening blossoms and unfolding leaves.

Missouri L. Haseman (May 24): Light infestations throughout central Missouri of spring cankerworms developed during the month, and in breeding experiments most of the worms were full-fed and in the soil by May 18.

FALL CANKERWORM (Alsophila pometaria Harris)

Connecticut W. E. Britton (May 24): Eggs have now hatched, though fully two weeks later than usual, and the young larvae are now feeding upon the leaves at New Haven.

LEAFHOPPERS (Jassidae)

Massachusetts A. I. Bourne (May 21): Leafhoppers are slightly more abundant than plant lice but considerably below normal. In fact, throughout most sections there was so little plant-louse and leafhopper infestation that growers did not find it necessary to employ nicotine in any of the pre-blossom sprays. Leafhoppers are beginning, however, to become somewhat more abundant so that we are recommending nicotine for our calyx sprays as a matter of precaution.

New York Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928. Green County (A. S. Mills): Many nymphs of Typhlocyba pometaria are on apple leaves. These were first observed on May 7.

BLACK APPLE LEAFHOPPER (Idiocerus provancheri Van D.)

New York C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Black apple leafhoppers were first observed in Greene, Ulster, and Columbia Counties during the first week in May.

ROSE LEAFHOPPER (Empoa rosae L.)

Connecticut M. P. Zappe (May): Rose leafhoppers began hatching about May 15. Abundance about the same as in an average year.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Nebraska M. H. Swenk (May 15-April 15): Several complaints have been received during the period covered by this report of injury last season to the newer growth of apple, pear, plum, and peach trees by the buffalo treehopper.

APPLE REDBUG (Lygidea mendax Reut.)

7 York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State College of Agriculture, May 14, 1928: Apple redbug nymphs were observed for the first time this season in Ulster and Orange Counties on May 11 and 12.

APPLE TWIG BORER (Amphiceros bicandatus Say)

orth Carolina

C. H. Brannon (May 18): Apple twigs damaged by this insect were sent in by O. B. Jones, County Agent, Henderson County.

CYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

7 York

Weekly News Letter N. Y. State College of Agriculture, May 14, 1928. Suffolk County (W. D. Deen): Nearly every orchard visited is severely infested with oyster-shell scale. This is probably due to the fact that concentrated lime sulphur is rarely used.

diana

J. J. Davis (May 5): Many inquiries have been received about the oyster-shell scale. These reports came largely from the northern half of Indiana.

uth Dakota

H. C. Severin (May 14): Our worst insect in South Dakota. Apple, pear, lilac, cottonwood, willow, and many other trees are badly attacked in the eastern part of the State.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

diana

Bennet A. Porter (May 19): Winter mortality has been unusually high. Counts in a neglected apple orchard near Vincennes on April 6 showed less than one-half of 1 per cent alive. Counts in a commercial peach orchard February 9 showed 38 per cent alive. At that time the orchard was sprayed, making it impossible to make a final mortality count.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

linois

W. P. Flint (May 17): More than the usual number of reports of injury by the round-headed apple tree borer have been sent in during the past month.

A FLAT-HEADED BORER (Agrilus sp.?)

braska

M. H. Swenk (April 15-May 15): Specimens of apple twigs showing borings by a species of Agrilus resembling the work of the sinuate pear borer were received from Douglas County on April 30.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Missouri

L. Haseman (May 24): In west-central Missouri apple curculios were active during the week of May 13 and collections made on the 20th contained freshly laid eggs.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts

A. I. Bourne (May 21): European red mites were found in this section (Amherst) to be hatching on the 6th to 8th of May. This pest is bearing out the early-season predictions of being fully as abundant throughout the State as it has ever been.

Connecticut

Philip Garman (May 23): Mites passed the winter well and hatched in considerable numbers in New Haven County.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Red spiders were hatching quite generally over the State during the week of May 7 to 14. Reports have been received from Ontario, Wayne, Monroe, Niagara, Orange, Columbia, and Suffolk Counties.

Virginia

W. S. Abbott (May 12): Many eggs found at Oakton. Eggs were found in this orchard in 1926, but none in 1927.

Nova Scotia

Excerpt from Review of Commerce and Industries for the month of April 1928, Consul Erik W. Magnuson (May 7): Consul Willson at Yarmouth, Nova Scotia, states that Bulletin No. 4 of the Nova Scotia Fruit Growers Association announces that insect development is nearly three weeks earlier than last year, and that action against red mite and bud moth should be advanced accordingly.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut

Philip Garman (May 23): The pear psylla is appearing in abundance in some orchards at Wallingford.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: The pear psylla is apparently abundant throughout central and eastern New York. Egg laying is fairly well completed and nymphs could easily be found the second week in May. Reports have been received from Orange, Ulster, Onondaga, Erie, Genesee, Ontario, and Monroe Counties. C. R. Crosby (May 12): Eggs have been deposited abundantly generally throughout the State, but in the western part of the Lake Ontario fruit belt they are not quite so abundant as elsewhere.

PEAR THRIPS (Taeniothrips inconsequens Uzel)

ew York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: The pear thrips is reported as doing slight damage in Greene, and Columbia Counties.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

ew York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State College of Agriculture, May 14, and 28, 1928: Pear leaf blister mites are reported from Columbia, Ulster, Greene, Suffolk, Dutchess, Chautauqua, and Orange Counties, indicating that egg-laying by this insect was under way during the second week in May.

CALIFORNIA PEAR SAWFLY (Diphadnus californicus Marlatt)

ashington

R. L. Webster (May 10): Jay Perry, Horticultural Inspector for the State Department of Agriculture, reports severe damage in 120 acres of pears; trees being stripped of foliage in Paterson, Benton County.

PEAR MIDGE (Contarinia pyrivora Riley)

ew York:

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State College of Agriculture, May 14 and May 28, 1928: The pear midge is reported as showing up in considerable numbers in the following counties: Columbia, Greene, Orange, and Ulster.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck.)

ew York

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928. Fredonia (D. M. Daniel): The oriental fruit moth is pupating; two pupal cases from which moths had emerged were found on May 8.

Georgia

O. I. Snapp and H. S. Swingle (May 19): The oriental fruit moth is very scarce in the Georgia peach belt this year (Fort Valley). To date we have found only a very few cases of injury from the insect. For some reason it has apparently suffered a marked setback in Georgia.

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T. H. Parks (May 24): Emergence of moths was taking place rapidly the week of May 7 to 12 in one of the peach orchards at Columbus badly infested last year. Emergence from pupal cases

on tree trunks was limited largely to trees which matured late varieties of peaches last fall. Location of pupae was not confined to near ground surface but scattered over trunk and even on older side branches. No feeding of larvae noticed yet.

PEACH TWIG BORER (Anarsia lineatella Zell.)

Mississippi

R. W. Harned (May 29): Peach twigs that showed injury probably caused by the peach twig borer have been received from several localities during the past few weeks. Most of the complaints have come from the northern section of the State.

LESSER PEACH TREE BORER (Aegeria pictipes G. & R.)

Georgia

O. I. Snapp and H. S. Swingle (May 15): Adults are now emerging in the orchard at Fort Valley.

GREEN PEACH APHID (Myzus persicae Sulz.)

Oregon

Don C. Mote (May 11): The green peach aphid is reported by Mr. Wilbur to be later than usual this year. First noted on prunes in Umatilla County on May 2 and none found as yet on peach.

BLACK PEACH APHID (Anuraphis persicae-niger Smith)

New York

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928. Orange County (Sidney Jones): The black peach aphid was found quite abundantly on young peach trees near Warwick.

Virginia

W. S. Abbott (May 10): A heavy infestation on young peach trees is reported for the first time in six or eight years at Vienna.

TARNISHED PLANT BUG (Lygus pratensis L.).

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: The tarnished plant bug is reported as unusually abundant and doing considerable damage in Ontario, Wayne, and Niagara Counties. The insect is also reported as being observed in Chautauqua County.

Illinois

W. P. Flint (May 17): Bugs have been found on peach at about the normal period, but in such small numbers that only a moderate amount of cat baring is anticipated.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

North Carolina

R. W. Leiby (May 23): Several complaints of peach and apple foliage injury have been received recently. One correspondent at Raleigh reported the death of 15 three-weeks-old chickens from eating the adult beetles which were found upon dissection in their crop.

DOGWOOD BORER (Oberea tripunctata Fab.)

Texas

F. L. Thomas (May 3): The dogwood borer was found entering the end of peach-tree twigs and tunnelling down the center of the twig into the main branch and on into the trunk of the tree, extending even to the tap root, at Crockett, Houston County, (Letter from J. C. Shoultz, County Agent.)

CHERRY

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Nebraska

M. H. Swenk (April 15-May 15): Serious damage to cherry trees by the fruit-tree bark beetle was reported from Hamilton County during the third week in April.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts

A. I. Bourne (May 21): The first adults of the plum curculio were collected by jarring experiments on plums here at the College (Amherst) on May 15. Prof. Whitcomb reports collecting the first specimens on May 11 in Middlesex County. He reports that this is three days earlier than the record in 1926 and six days earlier than in 1927.

Connecticut

Philip Garman (May 24): Emergence is late this year; very few curculios having emerged in cages to date, and few or none being found on apple trees in New Haven County.

Georgia

Oliver I. Snapp (May 7): The first matured curculio larvae entered the soil today to pupate. This is 25 days later than the first matured larvae were recorded in 1927. It is reasonably certain that there will be only one generation of the curculio in Georgia this year on account of the late appearance of larvae from peach drops.

Illinois

W. P. Flint (May 17): The first curculios were jarred from peach trees on April 18, in southern Illinois, after all petals were off. They were not present in appreciable numbers, however, until shucks began to push off.

Missouri

L. Haseman (May 24): Plum curculios in central Missouri began to oviposit during the week of May 6 and were still active during the week of May 20. Larvae in plums were from one-half to two-thirds grown on May 21.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Georgia

O. I. Snapp (May 4): A heavy infestation of the rusty plum aphid has occurred in a plum orchard at Fort Valley, causing

the grower to spray with nicotine sulphate. (May 19): The rusty brown plum aphid infestation has become more general and heavier since my report of May 4. A number of complaints of damage from this insect have recently reached the laboratory. The infestation is apparently heavier than usual.

Mississippi

R. W. Harned (May 29): During the latter part of April Inspector F. P. Amsler, Gulfport, reported that there had been very little complaint in regard to plant lice among the truck growers on the Gulf Coast this spring. From other parts of the State, however, have come many complaints in regard to these insects. Perhaps the most abundant species has been the southern plum or rusty brown aphid Hysteroneura setariae. Specimens identified by Mr. A. L. Hamner as this species have been received from the following counties: Washington, Jackson, Marshall, Lauderdale, Tate, Noxubee, Holmes, Copiah, and Harrison.

Oregon

Don C. Mote (May 11): The prune aphid is reported by Mr. Wilbur to be later than usual this year. First noted on prunes in Umatilla County on May 2, and none found as yet on peach.

RASPBERRY

BLACK-HORNED TREE CRICKET (Oecanthus nigricornis Walk.)

Indiana

J. J. Davis (May 5): Eggs have been reported commonly from raspberry canes in central Indiana.

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Indiana

J. J. Davis (May 26): Raspberry fruit worm adults Byturus unicolor were destructive to red raspberry May 21; black varieties were not attacked. This is the second year they have been destructive there.

Oregon

Don C. Mote (May 11): The raspberry fruit worm (Byturus spp.) adults were abundant on April 19, according to R. F. Wilbur, County Horticultural Inspector, Freewater, Oreg. At that time the first blossom clusters were unfolding from terminal shoots of raspberries. The adults were feeding on blossom clusters and leaves.

GRAPE

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Kansas

J. W. McColloch (May 14): Larvae of this insect were received from Gypsum with the information that they were injuring grape foliage.

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

Ohio E. W. Mendenhall (May 22): The grape leaf folder is present in Columbus and vicinity.

APPLE TWIG BORER (Amphicerus bicaudatus Say)

Nebraska M. H. Swenk (April 13-May 15): In the vicinity of Brownville, Nemaha County, one of the important grape-growing districts of Nebraska, an abundance of the borer was reported during the third week in April.

CURRENT AND GOOSEBERRY

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Current aphids are present but doing little damage in Orange and Greene Counties.

Ohio E. W. Mendenhall (May 17): Current bushes are infested again with the current aphid which is appearing generally throughout the State. This insect does considerable damage to currants in Ohio.

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

New York C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State College of Agriculture, May 28, 1928: The imported current worm is making its appearance in Suffolk, Orange, and Chautauqua Counties.

Indiana J. J. Davis (May 28): The current worm was reported defoliating gooseberries at LaFayette. The larvae were nearly full grown May 24.

CURRENT FRUIT FLY (Epochra canadensis Loew)

Oregon Don C. Mote (May 11): The first adult was observed in our out-door rearing cage on May 5.

BLACK GOOSEBERRY BORER (Xylocrius asassizi Lec.)

Oregon Don C. Mote (May 11): Adults have not yet emerged from hibernation (April 28) according to Mr. Wilcox. Evidently the cold rains have delayed emergence a month or more, compared with the time of emergence the two preceding years. On May 5 the first black gooseberry borer adults emerged.

PECAN

GALLS (Phylloxera spp.)

Mississippi

R. W. Harned (May 29): Phylloxera galls seem to be quite abundant on pecan trees this spring. Among those recently received and identified by Mr. A. L. Hamner are the following: Phylloxera devastatrix and Phylloxera caryaecaulis from Grace, and Phylloxera notabilis from McAdams.

PECAN CIGAR CASE BEARER (Coleophora caryaefoliella Clem.)

Mississippi

R. W. Harned (May 29): Specimens of the cigar case bearer were received from Durant on May 4. Medium injury to pecan was reported.

PECAN SESIA (Sesia scitula Harris)

Mississippi

R. W. Harned (May 29): Specimens of Sesia scitula from pecan trees were received from Isola April 20.

HICKORY SHOOT CURCULIO (Conotrachelus aratus Germ.)

Mississippi

R. W. Harned (May 29): Pecan twigs showing injury that was probably caused by Conotrachelus aratus were received on May 11 from Lexington.

GIANT APHID (Longistigma caryae Harr.)

Mississippi

R. W. Harned (May 29): Specimens collected on pecan at Quitman May 5.

SAWFLIES (Tenthredinidae)

North Carolina

C. H. Brannon (May 8): An undetermined species of sawfly is causing considerable damage to pecans in Martin County. Larvae of this insect collected on hickory at Raleigh.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

California

Monthly News Letter, Los Angeles County Horticultural Commission Vol. 10, No. 5, May 15, 1928: Following the recent finding of the citrus whitefly in a nursery at Arcadia, an inspection has been carried on and practically completed of all preferred host plants of this insect (sold from the infested nursery since December 1924) in so far as it was possible to trace them.

This work has been in charge of Deputy Wolff, who reports that as a result of these inspections five additional infestations were found, two of these in nurseries where plants were

being held for resale and the others at private residences. In two cases the infestation was discovered before any emergence of adults had occurred, so the destruction of the infested plants, immediately carried out, promises eradication. In the other three cases, however, some emergence had occurred and the treatment of adjoining hosts was necessary. All spraying in connection with these infestations has been carried out by the State Department of Agriculture under the supervision of P. B. Mackie. Three infestations found on properties adjacent to the original nursery infestation have been carefully treated, all infested plants being destroyed and all preferred host plants thoroughly sprayed.

Careful reinspections at regular intervals and repeated treatments, where necessary, will be continued until eradication has been secured.

ORANGE TORTRIX (Tortrix citrana Fern.)

Florida

J. R. Watson (May 28): The orange tortrix has been more severe than usual the past few weeks at Gainesville, some growers reporting as much as 25 per cent of their oranges mined by this small caterpillar. Since the crop of young oranges is too heavy, the work of this insect will probably do little harm.

CITRUS RUST MITE (Eriophyes oleivorus Ashm.)

Florida

J. R. Watson (May 28): Rust mites are appearing on the young fruit in about the usual numbers for this time of year.

A MILLIPED (Myriapoda)

Florida

J. R. Watson (May 28): In several groves millipeds have been injurious to young citrus trees. In every case this was in groves where a heavy sod of Natal grass was plowed under. Millipeds are always abundant under the dead stems of Natal grass and when such grass is plowed under in the spring the millipeds are driven to the citrus trees. They feed on the tender foliage and bark, sometimes girdling a limb or trunk of a young tree. They prefer to feed on the dead bark at the cut end of a newly set citrus tree but having consumed that they will sometimes attack live bark.

TRUCK - CROP INSECTS

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Alabama

L. W. Brannon (May 12): This flea beetle is doing considerable damage to mustard, turnips, and radishes in the vicinity of Birmingham.

STRIPED BLISTER BEETLE (Epicauta lemniscata Fab.)

Florida

J. R. Watson (May 28): The southern striped blister beetle has been more numerous than usual the past month attacking not only potatoes, egg plants, and peppers, but Asparagus plumosus as well.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Ohio

N. F. Howard (May 28): The potato beetle was found in the field on May 15 in southeastern Ohio.

Mississippi

P. K. Harrison (May 5): This insect is found in smaller numbers on Irish potatoes in Pocombe and vicinity than for the last two years. To date the damage is negligible.

R. W. Harned (May 29): On April 16, Inspector R. B. Deen reported that the Colorado potato beetles were very numerous in potato fields in and near Tupelo.

STALK BORER (Papaipema nebris nitela Guen.)

Indiana

J. J. Davis (May 26): H. K. Riley reports second instar stalk borers in tomato plants in out-of-door hot beds at Indianapolis May 17.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

Mississippi

R. W. Harned (May 29): Specimens of the common cabbage worm were found on nasturtium plants at Yazoo City April 26.

South Dakota

H. C. Severin (May 14): The first butterflies of the season were seen May 1 at Brookings.

CABBAGE MAGGOT (Hylemyia brassicae Rouché)

Massachusetts

A. I. Bourne (May 21): The first eggs of the cabbage maggot were seen at Waltham May 10. This is about the normal time for the first oviposition in this county.

New York

Weekly News Letter, State College of Agriculture, May 14, 1928. Suffolk County (T. D. Deer): Cabbage maggot flies were noticed the first time May 5, and on May 11 eggs could be readily found both in the seed bed and in the field. Warning cards on the cabbage maggot were sent out this week.

Pennsylvania

H. N. Worthley (May 12): After daily examinations for two weeks at the State College, the first eggs were found on May 12. Oviposition just beginning, as only one egg to 10 plants examined was found.

CABBAGE APHID (Brevicoryne brassicae L.)

Alabama

L. W. Brannon (April 19): This species of aphid is seriously damaging young cabbage plants in the vicinity of Birmingham.

Mississippi

R. W. Harned (May 28): Specimens collected on cabbage at Valley May 4, at Durant, May 9, and on turnips at Lexington, May 11, were sent to this office for determination.

HARLEQUIN BUG (Murgantia histrionica Fahn)

Alabama

L. W. Brannon (May 15): Adult harlequin bugs are fairly abundant in the vicinity of Birmingham and are damaging mustard and turnips in some instances. Egg masses are numerous in the fields. The first hatching of eggs was noted April 30 and second-instar nymphs are now numerous.

Mississippi

R. W. Harned (May 28): During the latter half of April three rather serious complaints in regard to the harlequin bug were received. At Yazoo City mustard and turnips were being injured. At Cockrum damage had been caused to mustard, spinach, and cabbage. At Ratliff damage had been caused to mustard.

CABBAGE CURCULIO (Gentorhynchus rapae Gyll.)

Kansas

J. W. McColloch (May 1): Damage to cabbage by this insect has been reported from Effingham.

Nebraska

M. H. Swank (April 15-May 15): During the last week in April a truck grower near Omaha lost about 10,000 young cabbage plants because of the attack of the cabbage curculio. This is the first time that the cabbage curculio has been found doing serious damage in Nebraska, so far as our records show.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comutana Fröhl.)

Indiana

J. J. Davis (May 5): What was apparently the moth of the strawberry leaf roller and eggs were reported abundant at

Walkerton, according to a report dated May 2. Specimens were not submitted, but the facts that the description fitted and that the owner had a severe attack in an adjoining strawberry bed last year lead us to believe that the above record is correct.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Missouri

L. Haseman (May 24): The strawberry weevil caused damage in old beds in St. Louis County during the fore part of the month. Weevils were busily at work during the week of May 6, laying eggs and cutting buds. On May 23 most of the larvae were full-fed and had pupated and one adult had emerged.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Massachusetts

A. I. Bourne (May 21): The common asparagus beetle appeared in large numbers May 17 in this locality (Amherst). It is abundant in fields where it was not controlled last year.

Ohio

T. H. Parks (May 24): The beetles are attacking young asparagus shoots in commercial plantings at Columbus. Eggs are now abundant but few have hatched.

Illinois

S. C. Chandler through W. P. Flint (May 17): Crioceris asparagi was found on asparagus with eggs on May 11 at Carbon-dale. The asparagus beetle is scarce in this section for some reason, although there is a large acreage in asparagus. This is the first record south of Alton.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Ohio

N. F. Howard (May 23): The first Mexican bean beetle in the field in Ohio was found on May 15 at Gallipolis. Only one specimen was found in several acres. On May 24, a single beetle was found in the field at Caldwell, Noble County. No beetles have been found at Athens nor has there been any activity in hibernation cages containing large numbers of beetles at that place. At this time it appears that the survival is very low.

North Carolina

R. W. Leiby (May 22): The first authentic record of the bean beetle appearing on beans this season was sent to this office by assistant J. A. Harris on May 21, when it was observed in Moore County. Two more records of its presence were received by telephone at Raleigh on May 22. The demand for literature on the control of this pest has been unusually heavy during the

past four weeks, probably because beans have been planted and last year's losses are not forgotten.

C. H. Brannon (May 8): The first adult received from the field was sent in today by O. O. Duker, County Agent, Robeson County, where it was found on beans.

Georgia

E. Lee Worsham (May 21): The Mexican bean beetle is unusually active this spring. They have passed the winter in large numbers and are doing much damage to string beans.

Alabama

L. W. Brannon (May 15): The first Mexican bean beetles of the 1928 season were found feeding in the field April 12. The season is about two weeks later than average. On April 16 a heavy frost occurred which severely damaged most patches of beans and completely killed other patches. This undoubtedly caused a setback in the emergence of beetles from hibernation. Only 1.8 per cent have emerged in the hibernation cage to date. The first egg masses were found in the field on May 4, and the first hatching of an egg mass was noted on May 14.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Alabama

L. W. Brannon (May 15): Adults of this species are doing more damage to beans than they were a month ago.

Mississippi

R. W. Harned (May 29): Many complaints have been received recently from Holmes, Pike, Lincoln, and Yazoo Counties in regard to the bean leaf beetle. In most cases garden beans had been injured by these insects but on April 26, Inspector Chesley Hines reported that a field of soybeans at Yazoo City had been riddled by this pest.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Ohio

N. F. Howard (May 29): The striped cucumber beetle was very numerous near Chillicothe May 22.

Missouri

L. Haseman (May 24): As usual this pest has begun its work on the young cucumbers and melons, and numerous complaints have been received during the month.

Mississippi

K. L. Cockerham (May 9): These insects were found to be seriously damaging squash on the above date. I have not seen these beetles more numerous in Mississippi in years. Since the above date, I have found them damaging squash, cantaloupes, cucumbers, and various other crops.

P. K. Harrison (April 25): These beetles were found in large numbers attacking squash in one field at Picayune.

Mississippi

E. W. Harned (May 29): Specimens of the striped cucumber beetle were received from Newton County on May 28, where they were reported as causing considerable damage to watermelon plants. Larvae belonging to the genus *Diabrotica*, and possibly to the species *Diabrotica vittata*, were received from Tillman May 14, with the report that watermelon plants had been injured by them.

SPOTTED CUCUMBER BEETLE (*Diabrotica duodecimpunctata* Fab.)

Ohio

N. F. Howard (May 28): The 12-spotted cucumber beetle was found in the field on May 15 in southeastern Ohio.

Alabama

L. W. Brannon (May 15): These insects are not damaging beans at Birmingham to the extent that they were a month ago.

Mississippi

K. L. Cockerham (May 26): For several weeks this beetle has been very abundant in the southern part of Mississippi. Various crops, including corn, squash, cucumbers, melons, and beans have been attacked.

SQUASH

SQUASH BORER (*Heliothis satyriniformis* Hbn.)

Mississippi

K. L. Cockerham (May 19): The first adult squash vine borer was seen today. This adult was a female and was actively engaged in depositing eggs on leaves of squash vines.

ONIONS

ONION MAGGOT (*Hylemyia antiqua* Meig.)

New York

C. R. Crosby (May 12): Flies began to emerge at Elba on May 5.

Kansas

J. W. McColloch (April 17): An infestation of this insect on onion was reported from Westmoreland.

Oregon

Don C. Mote (May 11): On April 27 Mr. Wilcox reported that the flies were out and had been in the field for some time, but because of successive rains and delayed plantings no injury has become apparent as yet.

BEETS

BEET LEAFHOPPER (*Eutettix tenellus* Baker)

Utah

G. F. Knowlton (May 10): The beet leafhopper is present in

the beet fields around Ogden and Hooper, the beets in most cases being in the four-leaf stage. From five to twelve leafhoppers are usually found in examining 100 linear feet of row. (May 25): At the present time the beet leafhopper is more numerous than it was a year ago in most beet fields in Boxelder County, and in some fields in Weber County, especially at Hooper. Fewer leafhoppers are present at Farmington, Lehi, Provo, and Layton than at this time in 1927, but a few sugar beets at Provo are showing well developed symptoms of curly-top. They are very scarce in Cache County. Large numbers have been present all the spring on the breeding ground in the desert west of Snowville.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

G. F. Knowlton (May 3): Black flea beetles are greatly retarding the development of some of the earliest fields of beets in the vicinity of Bear River City and at Tremonton. In one instance a field of 5 acres was plowed up and replanted because of the damage from this pest.

SWEET POTATO

SWEET-POTATO WEEVIL (Cylas formicarius Fab.)

E. Lee Worsham (May 21): A thorough survey once each year for the past five years of a small area in the southern part of Charlton County has failed to show any evidence of the sweet-potato weevil.

TORTOISE BEETLES (Cassidinae)

R. W. Harned (May 29): On May 21, Inspector Chesley Hines sent to this office from Canton tortoise beetles representing the species: Chirida guttata, Metritona bicolor, and Metritona bivittata. They were causing serious injury to sweet-potato plants at that place. On May 25 he sent to us beetles representing the same species from Yazoo City. Only medium damage had been caused at the latter place. On May 17 he sent the species Metritona bivittata and Coptocycla signifera from Adams County. He reported medium damage to sweet-potato plants by these beetles.

HORSE-RADISH

HORSE-RADISH FLEA BEETLE (Phyllotreta armoraciae Koch)

R. B. Friend (May 10): Cabbage was planted in land occupied by horse-radish last year and was being extensively eaten by the adult flea beetles at Norwich.

Missouri

L. Haseman (May 24): Last spring and again this spring a number of horse-radish growers in St. Louis County have had trouble with the horse-radish flea beetle; on May 7 the beetles were actively feeding and ovipositing, and in older plants the half-grown larvae were already at work in the leaf stalks.

WESTERN GARDEN FLEA BEETLE (Phyllotreta pusilla Horn)

Nebraska

M. H. Suenk (April 15-May 15): During the second week in May reports of serious damage to young radishes by the western cabbage flea beetle were received from Kearney County.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California

J. C. Elmore (May 25): The pepper weevil was found in a pepper field in midseason numbers (6 adults to 200 feet of row) which is unusual for this date at Norwalk. The weevils are to be found on nightshade in several localities in Los Angeles and Orange Counties.

EGGPLANT

EGGPLANT FLEA BEETLE (Epitrix fuscula Crotch)

Alabama

L. W. Brannon (May 11): This species of flea beetle has been doing considerable damage to young eggplants in the locality of Birmingham.

SERPENTINE LEAF MINER (Agromyza pusilla Meig.)

Nebraska

M. H. Suenk (April 15-May 15): During the third week in April an instance of young eggplants having been seriously injured by the leaf miner Agromyza pusilla was reported from Douglas County.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO BUDWORM (Heliothis virescens Fab.)

Florida

F. S. Chamberlin (May 16): The tobacco budworm is less abundant than is usually the case in May.

POTATO TUBER MOTH (Phthorimaea operculella Zell.)

Florida

J. R. Watson (May 28): The tobacco split worm is doing con-

siderable damage in the central part of Florida mining the lower leaves of the tobacco.

TOBACCO WIREWORM (Monocrenidius vespertinus Fab.)

North Carolina

J. N. Tenhet (May, 1928): Injury to tobacco from the tobacco wireworm is much less this season than last. Occasional fields are slightly damaged, but very few farmers are having any trouble in getting a "stand."

A GRASSHOPPER (Melanoplus sp.)

Florida

F. S. Chamberlin (May 16): Infestations of Melanoplus on tobacco are less abundant than usual.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (May 23): Sugarcane borer survival of hibernation has been unusually light and first-generation development is comparatively rare on both corn and cane. First-generation larvae are just reaching full growth at Baton Rouge. This is very much later than the same development occurred in 1927. Trichogramma minutum is an important egg parasite on the cane borer and many other hosts in Louisiana. These parasites have been bred in large numbers during the winter on the eggs of Sitotroga cerealella produced in corn. Field colonization tests of this parasite are under way on first, second, and third generations of cane-borer eggs to determine the practicability and possibility of increasing the effectiveness of this native parasite in cane-borer control.

HAWAIIAN SUGARCANE BORER (Rhabdocnemis obscura Boisd.)

Hawaiian Islands

O. H. Swezey (Report for 1927): The borer has been in the usual satisfactory control by the New Guinea tachinid (Ceromasia spheonophori Vill.), except in a number of instances where mature cane has stood for a long time before harvesting, and the borers were working on the cane that was buried beneath an accumulation of dead leaves or trash, so that the infested canes were not accessible to the parasites. A considerable amount of loss has resulted thus. On one plantation the loss was estimated at \$200,000.

ARMYWORMS (Cirphis unipuncta Haw. and
(Spodoptera mauritia Boisd.)

Hawaiian Islands

O. H. Swezey (Report for 1927): There is quite satisfactory control now in most places since the introduction of the parasites from Mexico in 1923. There are now at least eight valuable introduced parasites working on armyworms. Only two out-

breaks of any importance were reported during the year. These were of the nutgrass armyworm, (S. mauritia Bois.) and the cane soon recovered from the setback received when young.

SUGARCANE LEAF ROLLER (Omicodes accepta Butl.)

Hawaiian Islands O. H. Swezey (Report for 1927): There has been no noticeable injury by this pest for a number of years.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Hawaiian Islands O. H. Swezey (Report for 1927): Very rarely was a specimen of the beetle or grub met with. The introduced Phillippine wasp Scolia manilae Ashm. has kept it in control.

A WIREWORM (Monocrepidius exsul Sharp.)

Hawaiian Islands O. H. Swezey (Report for 1927): There was no trouble from wireworms. Perhaps this was due to non-planting of fields last year in the regions where wireworms were prevalent, as the injury by them is chiefly eating out the eyes of recently planted seed cane.

A MOLE CRICKET (Gryllotalpa africana Beauv.)

Hawaiian Islands O. H. Swezey (Report for 1927): Only in a few instances was there injury by this pest, in each case where cane was planted in wet or swampy regions infested by mole crickets which ate out some of the eyes of the cuttings so as to necessitate replanting. A parasite, Larra luzonensis Roh., has been introduced and is now well established. It will no doubt, in time bring about a reduction of damage by this pest.

A GRASSHOPPER (Oxya chinensis Thunb.)

Hawaiian Islands O. H. Swezey (Report for 1927): There were a few instances in which this grasshopper ate cane sufficiently to make a very ragged appearance and possibly made somewhat of a check to the cane. These were always where there was an abundance of nutgrass in the fields or along the roadsides and borders of fields.

AN APHID (Aphis sacchari Zehntner)

Hawaiian Islands O. H. Swezey (Report for 1927): There were no serious infestations. It was controlled by introduced ladybeetles, parasites, lacewing flies, and syrphid flies.

SUGARCANE LEAFHOPPER (Perkinsiella saccharicida Kirk.)

Hawaiian Islands O. H. Szezey (Report for 1927): No infestations of any importance came to our attention during the year. Most everywhere in the cane fields only an occasional leafhopper was to be found. In a few instances they became noticeably numerous but not abundant enough to be injurious. Their enemies soon increased so as to have the pest again reduced to scarcity. The chief enemies were Paranagrus optabilis and Ootetrastichus beatus, introduced egg parasites, and Cyrtorhinus mundulus, the small bug which sucks the eggs, introduced from Australia.

A MEALYBUG (Pseudococcus boninsis Kuwana)

Hawaiian Islands O. H. Szezey (Report for 1927): This mealybug is so completely controlled by Aphyucus ternyi as to be rarely met with. Trionymus sacchari Chll. generally prevalent as usual. The introduced ladybeetles on mealybugs do not attack this species, to much extent, being so well secluded behind the leaf sheaths. No mealybug parasite works on this mealybug.

RICE

A PYRALID MOTH (Chilo simplex Butler)

Hawaiian Islands E. H. Van Zwaluwenburg (May 9): As you know, this is a new pest in these Islands (confined to Oahu as far as we know), which now appears to be the Japanese Chilo simplex Butler. This insect is said to confine itself to rice and was originally described from Formosa. It is certain that the Chilo called simplex in India is not the authentic C. simplex. There is the possibility, however, that Fletcher's Chilo oryzae of India is the simplex of Japan, Formosa, and now the Hawaiian group. Certainly Fletcher and Ghosh's figures of larvae, pupae, and adults of oryzae, are not distinguishable from the insect here. Their descriptions leave something to be desired, but the figures are pretty good. Since the pest was discovered here a specimen of Cremastus hymeniae Vier. has been reared from a cocoon taken in a Chilo tunnel in rice. This ichneumonid is a common parasite of Omiodes spp. and many other Lepidoptera. Fullaway and Hadden, in Japan, write that the egg parasite (name not mentioned) of simplex is very effective in that country.

FOREST AND SHADE - TREE INSECTS

PERIODICAL CICADA (Tibicina septendecim L.)

New York

Mrs. G. H. Cisco (May 18): On our place, Bon Eden, Grymes Hill, Staten Island, there are evidences of the 17-year locust. I discovered the holes under a row of horse-chestnut trees.

Mrs. W. E. McArdell (May 23): The 17-year locusts are now coming out of the ground at Emerson Hill, Staten Island.

New Jersey

C. L. Lange (May 17): In the back yard of my home at 86 Central Ave., Glen Rock, I have found a great quantity of holes about one-half an inch in diameter and anywhere from 3 to 6 inches deep. On investigation I have been informed it is the 17-year locust.

New Jersey
and
Pennsylvania

C. A. Thomas (May 26): The periodical cicadas have not emerged at Bustleton, Pennsylvania, yet, although I have heard of them being found at Moorestown, New Jersey.

Pennsylvania

J. N. Knull (May 25): The first periodical cicada was found May 25 at Dauphin, Clark's Valley, but no general emergence. (May 30): Adults are numerous on vegetation at this place May 30.

Virginia

Max Fleisher (May 23): I wish to report that we have in this section (Cordonsville) the so-called plague of locusts. I never saw so many hollow grub shells and holes in the ground where they have come out, and the air is thick with locusts and their noise.

D. C. Peattie (May 20): The first adults (3 individuals) appeared May 20 and the numbers are increasing every day (Cherrydale).

Mrs. Eacho (May 23): The 17-year locusts are emerging in great numbers. I noticed them first May 19 at my home west of Fort Myer and south of Clarendon.

J. B. Pasbach (May 23): The 17-year locusts are emerging at my home at Accotink.

Leo Harlow (May 23): The 17-year locusts are emerging in great numbers at my home, 4 Virginia Ave., Jefferson Park, Alexandria.

U. S. Army Post, Quantico (May 23): The 17-year locusts are emerging in enormous numbers at Quantico.

W. C. Brewster (May 31): Adults are emerging in large numbers all over Lyon Park. They have been seen for about three days.

North Carolina

V. Harrison (May 28): I am enclosing under separate cover two specimens of the locusts. (Specimens sent from Wentworth).

GYPSY MOTH (Porthetria dispar L.)

Rhode Island

A. E. Stene (May 23): The season in Rhode Island has been cold and backward and insect development has been slow. The gypsy moths hatched 10 days or two weeks ago in some parts of the State but in other sections near the ocean they are just beginning to hatch. In no case have they become very active. Some increase in gypsy moths is looked for, which, in view of last year's abundance, presents quite a problem.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Indiana

J. J. Davis (May 5): Bagworms have been frequently sent in from southern Indiana.

Nebraska

H. H. Swenk (April 15-May 15): Beginning with the last few days in April and continuing through the first half of May, reports have been received of the start of injury to evergreen trees because of the presence of the bagworm. Several of these reports came from the vicinity of Lincoln.

GIANT APHID (Longistigma caryae Harr.)

Oklahoma

C. E. Sanborn (May 26): We have had a general infestation of one of the largest plant lice known, Lachnus longistigma. It has been locally dubbed the African mosquito, since it appears in the streets of cities something after the fashion of mosquitoes flying about.

It sometimes bites persons, although its food is the sap of trees, especially such forest trees as jack oak, sycamore, and maple. In addition to this, when numerous as it is now, it attacks many other trees and plants and becomes pestiferous to people. It has been more numerous this spring in Oklahoma than ever known before. This is due to the fact that cool weather prevailed last fall which was too cold for ladybugs to be active, yet not too cold for the existence of this plant louse. Sexes appeared and, as a result, eggs were laid by the thousands on such hosts as the black jack oaks in the forests. This insect will doubtless occur farther north and east as the season progresses.

IMBRICATED SNOUT BEETLE (Epicorus imbricatus Say)

North Carolina

C. H. Brannon (May 19): This insect was reported as causing damage to various trees in Forsyth County.

FUTNAM'S SCALE (Aspidiotus encylus Putn.)

South Dakota

H. C. Severin (May 14): Putnam's scale is a serious pest of apple, currant, gooseberry, elm, trembling aspen, etc., in eastern South Dakota.

BOXELLER

BOXELLER APHID (Periphyllus neundinis Thomas)

Utah

G. E. Knowlton (May 10): The boxelder aphid is abundant in northern Utah, and at the present time winged forms are beginning to appear.

ELM

ELM SCURFY SCALE (Chionaspis americana Johns.)

Indiana

J. J. Davis (May 26): Mr. H. Riley reports that the scurfy scale on elm began hatching the first week in May at LaFayette.

South Dakota

H. C. Severin (May 14): Many of the elms are becoming badly infested with this scale, being seriously damaged in the eastern part of the State.

Nebraska

M. H. Srenk (April 15-May 15): Additional complaints of injury by the white elm scale, Chionaspis americana, were received during the period covered by this report.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

Ohio

T. H. Parks (May 24): This scale is abundant and injurious to young elms on the streets of Columbus. Damage to the trees appears to be severe.

E. T. Mendenhall (May 5): The European elm scale is very bad on elm trees in Dayton and vicinity.

MAPLE

TOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Mississippi

R. W. Harned (May 29): Specimens collected on maple at Pontotoc on May 22.

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

Mississippi

R. W. Harned (May 29): Specimens collected on maple at Yazoo City on May 7, and identified by A. L. Hamner as probably Periphyllus lyropictus.

COTTONY MAPLE SCALE (Eulimneria vitis Rohv.)

Indiana J. J. Davis (May 5): Many inquiries have been received about the cottony maple scale. These reports came largely from the northern half of the State.

PINE

A SAWFLY (Neodiprion dyari Roh.)

Massachusetts J. V. Schoffner, Jr. (May 24): During 1927 this sawfly was unusually common in eastern Massachusetts and observations this spring indicate that it may be locally abundant this year. Apparently it passes the winter in the egg stage in this section. Eggs were hatching May 15.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

South Dakota H. C. Severin (May 14): Several complaints have been received during the past month. Pines in the Black Hills and also in windbreaks and lawns are sometimes infested.

Nebraska M. H. Swenk (April 15-May 15): Additional complaints of injury by the pine leaf scale were received during the period covered by this report.

Kansas J. W. McColloch (May 5): A heavy infestation of this scale has been found on blue spruce at Leavenworth.

PINE LEAF MINER (Paralichia pinifoliella Chamb.)

Massachusetts and Rhode Island J. V. Schoffner, Jr. (May 24): This leaf miner is very common on pitch pine throughout eastern Massachusetts. In some localities trees are quite brown. Mr. T. H. Jones noted this insect as very common in Rhode Island and with a very heavy infestation at Charleston.

SPRUCE

A EUCOSMID (Argyroloce abietana Fern.)

Michigan E. I. McDaniel (May 22): We are receiving many samples of the spruce tortrix, Clethreutes abietana working on blue spruce. They are coming in numbers from the upper part of the western coast of the State and also from Livingston County and occasionally from all parts. The insect seems to be increasing in numbers all over the State.

INSECTS AFFECTING GREENHOUSE AND
ORNAMENTAL PLANTS AND LAWNS

GREENHOUSE LEAF TYER (Phlyctenia ferrugalis Hbn.)

Connecticut

W. E. Britton (May 24): Considerable damage is being done to various plants under glass and in cold frames and in dwellings: houses. Heliotrope at New Haven and chrysanthemum at Elmwood are being injured.

New York

Weekly News Letter, N. Y. State College of Agriculture, May 14, 1928: Fredonia County (D. M. Daniel): The greenhouse leaf tyer is beginning to appear in greenhouses.

Ohio

E. W. Mendenhall (May 24): The marigold plants in a greenhouse in Columbus were badly infested with the greenhouse leaf tyer.

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Rhode Island

A. E. Stene (May 23): A nurseryman has had considerable trouble this spring from Brachyrhinus sulcatus in greenhouse cutting beds of Texas.

RED SPIDER (Tetranychus telarius L.)

Mississippi

R. W. Harned (May 29): Violet leaves from Durant on May 12 and cedar twigs from Ocean Springs on May 4 were found to be infested with red spiders. Only medium injury had been caused to the plants.

SOFTBUGS (Oniscidae)

Mississippi

R. W. Harned (May 29): A correspondent at Stephenson sent to us on May 24 some specimens of pillbugs with the report that they were causing serious damage to flowers.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Dicentromyia hypogaea Loew)

Ohio

E. W. Mendenhall (May 25): The chrysanthemum midge is very bad in Springfield, where not treated properly. Some of the greenhouses where shipments are made are kept free from this pest.

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Mississippi

R. W. Harned (May 29): Specimens on chrysanthemum collected at Yazoo City April 26 and at Canton May 21 were sent in for determination.

DELPHINIUM

CYCLOAMEN MITE (*Tarsonemus pallidus* Banks)

Indiana

J. J. Davis (May 26): The cyclamen mite was reported very destructive to delphinium at Lebanon May 21. The correspondent reports that her delphiniums were similarly ruined a year ago.

GLADIOLUS

CORN EAR WORM (*Heliothis obsoleta* Fab.)

Mississippi

K. L. Cockerham (May 6): This insect was found doing rather serious damage to gladioli at Biloxi. The larvae eat the blossom buds inside the shuck, therefore the damage is at first not noticed, the larvae usually being concealed inside of the shuck.

IRIS

IRIS BORER (*Macronoctua onusta* Grote)

Ohio

E. W. Mendenhall (May 31): The iris borer is quite bad in Columbus and vicinity and is doing considerable damage to iris.

JASMINE

CITRUS WHITEFLY (*Dialeurodes citri* Ashm.)

Ohio

E. W. Mendenhall (May 19): The citrus whitefly was found infesting cane jasmine plants in one of the greenhouses in Springfield.

NARCISSUS

LESSER BULB FLY (*Eumerus strigatus* Fallén)

Ohio

E. W. Mendenhall (May 14): I find the narcissus plants in nurseries at Dayton and Fiqua infested with the lesser bulb fly.

NARCISSUS BULB FLY (*Merodon equestris* Fab.)

Oregon

Don C. Mote (May 11): The greater bulb fly *Merodon equestris*, began to emerge at Corvallis, according to Mr. Wilcox, on April 25.

BULB MITE (*Rhizoglyphus hyacinthi* Banks)

Ohio

E. W. Mendenhall (May 31): I find the bulb mite quite bad on narcissus bulbs in nurseries at Dayton and Fiqua.

Nebraska

M. H. Swenk (April 15-May 15): Late in April another greenhouse in Omaha reported a serious infestation of tulip and lily with the bulb mite.

ALFALFA NEMATODE (Tylenchus dipsaci Kuhn)

Ohio

E. W. Mendenhall (May 14): I found the narcissus bulbs in the nurseries in Dayton and Piqua infested with nematodes, Tylenchus dipsaci, some damage being caused to the narcissus plants.

ROSE

POTATO APHID (Illinoia solanifolii Ashm.)

Mississippi

R. W. Harned (May 29): Specimens of Macrosiphum rosaeifolium on rose collected at Morton on April 23 were sent to this office for determination.

ROSE LEAFHOPPER (Empoia rosae L.)

Ohio

N. E. Howard (May 29): This insect is abundant on Rambler roses in the Columbus district. Some adults of the first brood have already emerged.

SUMAC

A BEETLE (Euphorida rhois Forst.)

Kansas

J. W. McColloch (May 20): This flea beetle is very abundant on sumac and firebush at Manhattan. Last year the larvae practically killed a number of firebushes on the campus.

LAWNS

WHITE GRUBS (Phyllonhaga spp.)

Indiana

J. J. Davis (May 26): White grubs were responsible for winter killing of lawns at Elkhart, according to a report received May 18. White grubs were also reported damaging delphinium at Tipton May 21.

Kansas

J. W. McColloch (May 12): Injury to a bluegrass lawn is reported from Burlingame.

EARTHWORMS (Lumbricus sp.)

Ohio

T. H. Parks (May 10): Earthworms have been reported as damaging lawns in the city of Portsmouth, Scioto County. They come to the surface, where their mounds are unsightly.

ANTS (Formicidae)

Michigan

R. H. Pettit (May 19): Never before have ants in lawns made more trouble in Michigan. The discovery of a practical, effective and cheap method of treatment is greatly to be desired.

Nebraska

M. H. Swenk (April 15-May 15): Many complaints have come in during the period covered by this report of the injurious work of ants in lawns.

Indiana

J. J. Davis (May 26): Inquiries have been received from many localities in the northern half of the State of the abundance of ants in lawns. The majority have come in within the last 10 days, although others were received the last of April and early in May.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

HOUSE FLY (Musca domestica L.)

Missouri

L. Haseman (May 24): During the month the house fly has not been so abundant as usual.

BEDBUG (Cimex lectularius L.)

South Dakota

H. C. Severin (May 14): The usual number of letters were received during the past few months regarding bedbugs.

HUMAN FLEA (Pulex irritans L.)

General
statement

F. C. Bishopp (May 31): Reports of serious annoyance to man and animals have come in during May from Indiana, Illinois, Missouri, Arkansas, and Louisiana.

DOG FLEA (Ctenocephalus canis Curtis.)

CAT FLEA (Ctenocephalus felis Bouche)

General
statement

F. C. Bishopp (May 31): Reports of infestations of dog and cat fleas were received in May from Pennsylvania, Maryland, and South Carolina.

Indiana

J. J. Davis (May 26): Fleas were very abundant and annoying in farm buildings at Pittsboro, May 18. Other reports from Clayton and Frankfort were received early in April.

Texas

D. C. Farman (May 19-24): One premise at Brownsville was reported to be heavily infested with dog fleas but examination of the place was not made or any specimens obtained.

CLOVER MITE (Bryobia praetiosa Koch)

Indiana J. J. Davis (May 5): The clover mite was reported the last half of April as very annoying in homes at Edinburg and Rushville. (May 26): Further reports of annoyance in houses were received from Converse May 16, LaFayette May 24, and Frankfort May 12. They were reported as injuring lawns.

Nebraska M. H. Suenk (April 15-May 15): Complaints of annoyance by the clover mite in houses, which were noted in the last report as beginning to be received on March 20, continued to be received until May 10.

A GNAT (Hippelates sp.)

Texas D. C. Farman (May 19-24): On a survey trip to Laredo, Rio Grande City, ranches in northeastern Starr County, Missio, Brownsville, Falfurrias, Alice, Beeville, and San Antonio, examinations of live stock along the way was made and headquarters of several ranches were visited to get information and make examinations.

and The gnats were observed from Rio Grande City to Brownsville, more at Brownsville than any place examined. They were found quite generally in windows of well-lighted houses and in one sandwich shop on the east side of town there were several hundred gnats and they would annoy customers to some extent. A kidney bait was exposed in several fields and open places about town and a good number of gnats could always be raised. Mr. Barber reported them to be so bad at times in one field that it was impossible to work there during the summer. They were reported to be bad at times over the entire valley and considerable complaint was had of sore eyes from gnats. At a garage in the north edge of San Benito there were swarms of gnats and there was a suggestion of the conditions found during April in Coachella Valley, California; one of the men stated that they are always bad there even at times in winter. A few could usually be raised with bits about Beeville and they were reported to be quite bad at times.

AMERICAN DOG TICK (Dermacentor variabilis Say)

Maryland and Virginia F. C. Bishopp (May 31): Several reports have been received of annoyance to people and dogs due to attack of wood ticks.

CATTLE

HORN FLY (Haematobia irritans L.)

Virginia F. C. Bishopp (May 31): Horn flies are sufficiently numerous to annoy cattle considerably in the vicinity of Burks Garden. The number per animal ranges from 20 to 500 with an average of about 300.

- Washington, D.C. F. C. Bishopp (May 27): Comparatively few horn flies are present on cattle in this section. The number per head runs from 0 to 100 with an average of about 20.
- Missouri L. Haseman (May 24): Horn flies have been unusually abundant for this season of the year, causing considerable annoyance to cattle.
- Texas D. C. Farman (May 19-24): On a survey trip to Laredo, Rio Grande City, ranches in northeastern Starr County, Mission, Brownsville, Edinburg, Alice, Beeville, and San Antonio examinations of live stock along the way were made and headquarters of several ranches were visited to get information and make examinations.
- Very few horn flies were observed at any place; it was rare to see an animal with more than 25 to 50 flies and most appeared to be entirely free of flies, less than I have ever observed.
- COMMON CATTLE GRUB (Hypoderma lineatum DeVill.)
NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)
- New York F. C. Bishopp (May 20): A correspondent reports cattle grubs to be more abundant in the backs of cattle in this vicinity (Schenectady) this spring than he has ever seen them.
- Virginia F. C. Bishopp (May 20): The average number of grubs runs less than 1 per head. This is undoubtedly less than in surrounding territory owing to the control work which is being carried on in Burkes Garden. All larvae found proved to be H. bovis except one 4th instar H. lineatum. This is an exceptionally late spring record for this species.
- Indiana J. J. Davis (May 5): The ox warble was reported as conspicuously abundant at Winamac, LaFayette, and Frankfort.
- South Dakota H. C. Severin (May 14): At times several dozen warbles may be found on one animal. The distribution is peculiar in South Dakota, some areas being free from this pest, while neighboring areas will be badly infested. At this date none of the warbles are ready to leave the cattle.
- SHORT-NOSED OX LOUSE (Haematopinus eurysternus Nitz.)
- Nebraska M. H. Swenk (April 15-May 15): Early in May a Sherman County ranchman reported a heavy infestation of some of his cattle with sucking lice, Haematopinus eurysternus.
- LONG-NOSED OX LOUSE (Linoognathus vituli L.)
- Nebraska M. H. Swenk (April 15-May 15): Early in May a Sherman County ranchman reported a heavy infestation of some of his cattle with this insect.

SCREW WORM (Cochliomyia macellaria Fab.)

Texas

D. C. Parnan (May 19-24): On a survey trip to Laredo, Rio Grande City, ranches in northeastern Starr County, Mission, Brownsville, Falfurrias, Alice, Beeville, and San Antonio, examinations of live stock along the way were made and headquarters of several ranches were visited to get information and make examinations.

Only moderate numbers of these flies were observed at any place visited. Nearly all attractive materials had a few adults about, and more flies were observed on the ranches in northeastern Starr County than at any other place and there appeared to be fewer at Laredo and down the valley to Mission than at Uvalde, more about Brownsville. The adults had probably been destroyed by a storm on May 13. Only an occasional screw worm case was found and there was not a single case on four ranches in northern Starr County. Some worm medicines were reported to have been sold this year at all places where most of the calls were made since the rains began; ranchmen are generally expecting many worms soon.

SHEEP

SHEEP TICK (Delophagus ovinus L.)

South Dakota

H. C. Severin (May 14): Several severe infestations have come to our attention. New-born lambs may have as many as 50 to 100 ticks upon them.

BLACK BLOWFLY (Phormia regina Meig.)

New Mexico

J. R. Douglass (May 21): Complaints have been received from the largest sheep owners in this part of the State (Estancia) relative to the attack of the wool maggot. Many ewes are infested about the rump following lambing. Favorable weather conditions prevailed the first half of May and very little or no sheering has been done. A great many dead animals, especially lambs killed by the recent snow, are to be found on the range.

POULTRY

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Texas

D. C. Parnan (May 19-24): On a survey trip to Laredo, Rio Grande City, ranches in northeastern Starr County, Mission, Brownsville, Falfurrias, Alice, Beeville, and San Antonio, examinations of live stock along the way were made and headquarters of several ranches were visited to get information and make examinations.

The fleas were found quite general, approximately 85 per cent

of the places examined had fleas in noticeable numbers. From Uvalde to El Paso and Brownsville the fleas are in moderate numbers and some losses were found in about half of the flocks and in one case near Dilly more than half of all the chickens on the place had been lost. Very heavy losses from the fleas were reported at Alice and Beeville. The home demonstration agent stated that all of the chickens on some places had been lost and she had just returned from a place where the chickens were literally covered with fleas and dying in great numbers. One place 6 miles northeast of Alice had lost a flock of 200 to 300 hens and all of the young chickens and the dogs and cats observed were covered with the fleas and one dog had died. Reports varied as to the loss in the county from 25 to 75 per cent. One man who appeared to be conservative and pretty well acquainted with poultry conditions stated that most of the young chickens had been lost and probably 10 per cent of the old stock in that section. Fleas were found north to San Antonio and to Uvalde at most places. The heavy losses were always where general flocks were kept on ranches and run in barns and under houses but a considerable number of fleas were found on some well-kept flocks and places where fleas were not expected to be found. The probable loss in the territory visited is estimated at from \$50,000 to \$100,000.

HOUSEHOLD AND STORED-PRODUCTS

INSECTS

TERMITES (Reticulitermes spp.)

Indiana

J. J. Davis (May 5): Termites are very troublesome and destructive in every section of the State. (May 26): Termites have been destructive as usual, most of our reports the past month coming from the northern half of the State.

Kansas

J. W. McCulloch (May 20): During the period from April 21 to May 11, injury to woodwork in dwellings by termites has occurred at Great Bend, Winfield, Sabetha, Importa, Bigelow, Geneseo, Hugoton, Topeka, and Kansas City.

Nebraska

M. H. Swenk (April 15-May 15): Reports of serious damage to houses by our common termite, Reticulitermes tibialis Bnks. were received late in April from Clay County and in the middle of May from Cass County.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

R. T. Harned (May 29): After seven years of poisoning for this species on a 33 block area, recent investigations by Dr. M. P. Smith indicate that the city of Columbus has apparently eradicated the Argentine ant from this area. The ants are on the

verge of eradication in a number of other towns, namely: Oxford, West Point, Quitman, Pascagoula, and others. Recently the town of New Albany was found to be infested with the Argentine ant.

ANTS (Formicidae)

Mississippi

R. W. Harned (May 29): The fire ant, Solenopsis geminata, continues to be as great a pest as ever in this State. During the past few months this office has received complaints of the ants gnawing into strawberries, getting on the uniforms of athletes and stinging the people when the uniforms were put on, entering houses and stores, and causing much annoyance. Inspector N. L. Douglass, Grenada, recently sent to this office specimens of the odorous house ant, Tapinoma sessile Say, which he stated were causing housekeepers much annoyance in certain areas in that town. Recently a florist at Booneville sent to us some ants that were identified by Dr. M. R. Smith as Cremastogaster laeviuscula var. clara Mayr. He stated that the ants were eating into the base of carnation buds, causing the petals to fall off. Dr. M. R. Smith reports that he recently found ants belonging to Camponotus caryae var. decipiens Wheeler infesting a house in Columbus. The housekeeper stated that the ants fed on syrup and were most numerous in the house about dusk. A correspondent at Corinth sent in specimens of Prenolepis sp., recently with the report that they were entering a refrigerator in her home. This species seems to be quite prevalent throughout the State.

SILVERFISH (Lepisma saccharina L.)

Indiana

J. J. Davis (May 26): Silverfish were reported annoying and destructive at Lowell and LaFayette during the past month.

POWDER POST BEETLES (Lyctus spp.)

Indiana

J. J. Davis (May 5): Powder-post beetles were reported doing damage to building timbers at Crown Point and to shovel handles at Terre Haute.

PALE-MARKED ASH BORER (Eburia quadrigeminata Say)

Indiana

J. J. Davis (May 26): This insect was reported boring in a hickory-elm floor which had been down for 35 years. This report was from Columbia City May 5.

LARDER BEETLE (Dermestes lardarius L.)

Nebraska

M. H. Swenk (April 15-May 15): The larder beetle was reported from Holt County April 5 as present numerously about a smoke-house in which the pest had previously done injury to smoked and salt-cured meats.

BEAN WEEVIL (Mylabris obtectus Say)

South Dakota H. C. Severin (May 10): Severe damage to stored beans has been reported several dozen times during the past few months,

WEBBING CLOTHES MOTH (Tineola biselliella Hum.)

South Dakota H. C. Severin (May 14): Tineola biselliella is our most common and injurious clothes moth. The case-making species is also found in South Dakota but rarely reported injurious.

COCKROACHES (Blattidae)

Indiana J. J. Davis (May 5): Cockroaches have been repeatedly reported from all sections of the State.



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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1928

Although cutworms have not attracted an undue amount of attention throughout the greater part of the country, a rather serious outbreak developed late in the month on the overflowed land in Arkansas, occasioning a call for Federal aid. The pale western cutworm is also occurring in threatening numbers and doing very considerable damage in parts of North Dakota. Reports of lesser cutworm trouble were received from South Carolina, Mississippi, and Wisconsin.

A severe grasshopper outbreak appears to be developing in Kansas and Nebraska, but little grasshopper trouble is anticipated over the remainder of the country.

Brood A of the white grubs is appearing in destructive numbers in Iowa, Wisconsin, Kansas, and eastward to Indiana.

An unusually large number of wireworm reports have been received this month from New England and the Middle Atlantic States southward to South Carolina and westward to Wisconsin and Kansas. In Illinois they have already occasioned more damage than in many years. An unusual outbreak of the corn and cotton wireworm was reported about the middle of the month from Mississippi.

The Hessian-fly situation has developed a rather serious aspect in Ohio and Nebraska.

An unusual outbreak of the meadow plant bug developed early in the month in Iowa. In one case a 50-acre field of wheat was completely destroyed by this insect.

The wheat stem maggot is appearing in abnormally large numbers in Iowa, Nebraska, and Kansas. In Nebraska certain fields are suffering a loss of 30 per cent of the wheat heads.

The stalk borer is again being reported from Indiana westward to Iowa, Nebraska, and Kansas. It does not seem, however, to be so extensive or serious as last year.

Sod webworms are appearing in destructive numbers over the East Central and West Central States. These insects have not appeared in troublesome numbers during the past few years.

Corn billbugs are occurring in unusually large numbers and doing very considerable damage in parts of Ohio, Indiana, Illinois, Iowa, and Kansas.

A new species of Coleophora was discovered early in the month damaging grass in the central part of Indiana.

The lesser clover leaf weevil is very seriously affecting clover buds in eastern Illinois. Infestations in the first crop run from 30 to 60 per cent of the buds. This insect is occurring in about the usual numbers in Ohio.

Aphids continue to be subnormally abundant throughout the eastern fruit-growing sections of the United States.

The cool, wet weather which has prevailed in the East Central Middle Atlantic, and New England States is generally conceded to be adversely affecting the codling moth.

The pear midge appears to be becoming increasingly serious in the New England States and New York. In the latter State some orchards will suffer a 50 per cent loss this year.

Throughout the Middle Atlantic States westward to Ohio the oriental peach moth appears to be generally less prevalent than last year. Reports of very effective control by parasites have been received from Connecticut and New Jersey. The backward season, however, may have had something to do with this decrease in number.

Although appearing later than last year, the plum curculio is now doing about the average amount of damage in the New England, Middle Atlantic, and northern part of the South Atlantic States.

The walnut caterpillar is reported as more abundant on pecans in Texas than it has been for the past three years. Many trees are already defoliated.

During the month there have been several outbreaks of a small cistelid beetle, Hymenorus obscurus Say, attacking young fruits, blossoms, and leaves of citrus fruit in Florida. This insect usually feeds on lichens on the trunks of the trees.

The colorado potato beetle is being reported from the gulf region and Florida as unusually abundant. A similar report from Virginia might indicate that the year is to be one of unusual abundance of the insect.

The cabbage maggot is generally serious over the New England, Middle Atlantic, and Central States. In Iowa this pest has assumed economic importance only within the last few years and it seems to be increasing in destructiveness very rapidly.

About the middle of the month a rather severe outbreak of the diamond-back moth occurred on cabbage in South Carolina. This insect has also been reported from Mississippi.

The onion maggot is reported as doing considerable damage in Ohio, Indiana, Wisconsin, and Iowa.

The asparagus beetle was destructive in Ames, Muscatine, and Des Moines, Iowa this spring. This insect appears to be moving westward very rapidly.

The Mexican bean beetle was discovered at College Park, Md., this month and has made very considerable territorial expansion in North Carolina. In the original infested territory in Alabama the winter survival was lower than any season on record.

The lean leaf beetle has been unusually abundant in the two Carolinas this season, in some places completely defoliating the plants.

The outbreak of Chilo simplex Butler recently discovered in the Hawaiian Islands (Oahu) is now known to be infesting between 1,500 and 2,000 acres of rice. The infestation is so intense that from two rice stools 40 and 50 adult moths were reared.

The pine leaf scale is reported as seriously abundant in certain parts of Wisconsin and Nebraska.

A species of Neodiprion has completely defoliated pitch pines in many places in Connecticut. This is probably the same species that was reported late in June as defoliating pitch pines in Clinton County, New York, in which State it appeared for the first time last year.

A curculionid beetle Thylacites inganus L., has been discovered attacking various species of spruces in eastern Massachusetts nurseries. It has also been found on most of the pines in these nurseries excepting white pine. It is recorded as feeding on birch foliage in parts of Europe and, in Leng's catalogue, as having been collected in Missouri.

A severe outbreak of the eastern spruce beetle, which is believed to have started about 1922, has just been discovered in north-central Maine.

The cork oak midge, Plagiotrochus suberi Weld., was discovered for the first time in Los Angeles last year. This insect has been taken from San Jose, Santa Clara, San Francisco, and Pasadena, and

in every case on the European cork oak, upon which host it was evidently introduced from Europe.

Many complaints have been received from Mississippi of damage by the pecan bud moth to young pecan stock.

A serious outbreak of fleas has developed in Atlanta, Ga., which has attracted considerable attention of the Health Department of that city. A report of trouble from this insect has been received from Ocala, Fla.

The gnat, Hippelates sp. probably flavipes Loew, is proving extremely troublesome and annoying in the environs of New Braunfels, Tex.

The usual quota of reports on termites was received from the Central States.

Reports on the emergence of Brood II of the periodical cicada were received in large numbers throughout the early part of the month from Connecticut, New York, New Jersey, and Pennsylvania. The emergence in Virginia was completed early in the month and the insects in that State have practically disappeared. A very interesting collection was made at Yazoo City, Miss., on May 29 when inside a boll weevil cage there emerged a female periodical cicada. This belonged to the 13-year Brood XXVII. The only times that this brood has previously been recorded from any point in the United States, were in 1902, when it was reported as appearing on May 20 at Suffolk, Franklin County, Miss., and thirteen years later, in 1915, when this brood was seen again at this place.

ERRATUM

In the first paragraph of the outstanding features of the last number of the Survey Bulletin (Vol. 8, No.4) the last sentence should read "Nova Scotia Fruit Growers Association is recommending early treatment for the red mites ***".

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JUNE, 1928

The area at present known to be infested by the European corn borer in Ontario and Quebec covers approximately 95,650 square miles. It extends 575 miles from east to west and 385 miles from north to south. Infestations have been found as far west as St. Joseph Island, 15 miles east of Sault Ste. Marie, and as far east as Batiscan on the St. Lawrence River, 50 miles west of Quebec City. The insect has now reached practically the northern limit of the corn-growing area in Canada.

An outbreak of the roadside grasshopper, Camnula pellucida Scudder, has occurred in the Chilcotin ranges and surrounding country in British Columbia. Poisoned baits are being distributed at all infested points.

Wireworms have been by far the chief pest of field crops in southern Saskatchewan this spring. Recent heavy rains resulted in a partial recovery of the damaged crops in many fields.

The red-backed cutworm has infested about 50 per cent of the sugar-beet fields in southern Alberta, resulting in from 25 to 100 per cent loss. The infestation in wheat, sweet clover, and alfalfa is light, but some fields show as high a loss as 15 per cent.

Cutworms have been rather generally troublesome in gardens in southern Saskatchewan. This^{is} partly due to early hatching and the very dry conditions this spring. Several species were involved.

May beetles appeared in large numbers over extensive areas in southwestern Quebec during May and caused serious damage to the foliage of several species of deciduous trees. May beetle flights were also observed locally in New Brunswick during the latter part of May and early June.

Up to the middle of June, no adults or larvae of the Mexican bean beetle had been found in Ontario in localities where infestations were discovered last year.

Overwintering adults of grape leafhoppers are present in sufficiently large numbers in the Niagara peninsula, Ontario, to give rise, under favorable conditions, to local outbreaks.

Reports from Nova Scotia, New Brunswick, and British Columbia indicate that aphids are not abundant in these provinces this season.

A survey of the European beech bark louse situation in New Brunswick shows that there is a very heavy infestation of this species in Westmoreland County and one of less severity in Albert County.

Reports from British Columbia, Alberta, Saskatchewan, Ontario, Quebec, and New Brunswick, indicate that tent caterpillars of several species, principally the forest tent caterpillar and the eastern tent caterpillar, are unusually prevalent over widespread areas in the Dominion. A severe outbreak of the forest tent caterpillar developed over the whole eastern half of Alberta and northwestern Saskatchewan, seriously defoliating native poplars.

The spruce budworm is occurring in outbreak form in territory west and north of Sudbury, Ontario. During 1927 it spread extensively and the injury which will result from its depredations this season will probably be very severe.

A very extensive outbreak of the hemlock looper is occurring throughout the Muskoka Lake region in central Ontario. In the Thousand Islands area large numbers of trees have died and many thousands more are dying as a result of defoliation by this species during the past two years. Eggs of the looper have now hatched and the young caterpillars are feeding.

A very severe outbreak of the larch sawfly is reported from various sections of Ontario, even young stands of larch being affected.

Warble flies, Hypoderma bovis DeG., are widespread in southern Manitoba, affecting cattle, particularly young animals.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Florida H. W. Berger (June 22): An excessively large number of young lubber grasshoppers, Dictyophorus reticulatus Thunb., appeared during the latter part of May in some suburban allotments just west of Gainesville. The insects became so numerous that people, especially ladies, were annoyed by the insects crawling upon them. Following an unusually heavy, driving rain, comparatively few remained. No injury to plants was noted although the grasshoppers reported as crawling upon them in large numbers. The source of the infestation was not traced.
- Nebraska M. H. Swenk (May 15-June 15): During the first half of June reports of an abundance of grasshoppers, Melanoplus spp., in alfalfa fields have been received from western Nebraska, from Chase County east to Lincoln County.

- Kansas J. W. McColloch (June 20): Early reports indicate that a grasshopper outbreak is developing in the State. Between May 24 and June 7 reports were received from Bogue, Golden, Oberlin, Edmond, and Larned.

CUTWORMS (Noctuidae)

- Massachusetts A. I. Bourne (June 25): Cutworms have been about as abundant as usual.
- New York Weekly News Letter, N. Y. State Coll. Agr. (June 11): Columbia County (A. B. Buchholz): Cutworms prevalent. Chautauqua County (G. H. Salisbury): Cutworms are very serious on cabbage and cauliflower in some lots.
- Arkansas W. A. Oldfield (June 20): Cutworms serious. Damage to all crops, principally corn on overflow land. Want Federal aid and advice. (Telegram.)
- Mississippi R. W. Harned (June 25): A few complaints regarding cutworms have been received every day this spring. Only three species have been received during June. They are as follows: Lycophotia margaritosa saucia on corn at Holly Springs, Feltia annexa on cotton at Yazoo City, and Agrotis ypsilon on cotton at Yazoo City.
- New Mexico J. R. Douglass (June 11): Have received several reports of injury to corn and beans by cutworms throughout the Estancia Valley.
- Indiana J. J. Davis (June 26): Cutworms (Euxoa sp.) destroyed 3 or 4 acres of corn at Winamac according to a report received June 2.

Wisconsin

E. L. Chambers (June 15): Our pest reporters from Winnebago, Fond du Lac, Racine, Kenosha, Jefferson, Roch, Greene, Grant, and Monroe Counties have reported cutworms on corn and garden crops.

PALE WESTERN CUTWORM (Porosagrotis orthogonia Morr.)

North Dakota

C. N. Ainslie (June 22): This cutworm seems to be increasing in numbers this season and its injuries are more apparent than for the past two or three years. Fields of wheat have been destroyed near Mott, and serious damage to corn has been reported from different localities. For some reason this species has not multiplied during the past two or three years but the check seems to have been removed and the worms are becoming more numerous.

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Kansas

J. W. McColloch (June 1): The moths of the army cutworm are reported abundant at Abbyville and Eureka.

VARIEGATED CUTWORM (Lycophotia margaritosa saucia Hbn.)

South Carolina

W. J. Reid, Jr. (May 15): The cutworms were found to have tunneled their way into the young heads of approximately 5 per cent of the plants in a 22-acre field of spring cabbage on the J. M. Harrison farm in the immediate vicinity of Charleston. The infested plants are rendered unfit for use as a result of the attack.

LINED CORN BORER (Hadena fractilinea Grote)

Wisconsin

E. L. Chambers (June 15): Timothy sod land followed by corn was reported badly attacked in spots by the lined stalk borer which seems to be worse than last year when many stalks along the fence rows of fields in that vicinity were reported damaged.

CORN EAR WORM (Heliothis obsoleta Fab.)

North Carolina

W. A. Thomas (June 14): A few specimens of this insect were observed on snap beans on this date. On a near-by tomato field a rather heavy infestation had developed and considerable damage is being done by the larvae boring into the nearly mature fruit. Most of the injured fruit has developed rot and is a total loss.

Georgia Oliver I. Snapp (June 11): Infestation heavy on 300 acres of tomatoes in southern Georgia. Growers have experienced difficulty controlling the insect. Infestation also heavy at Fort Valley.

Alabama L. W. Brannon (June 8): The first tomato fruit worm egg of the 1928 season was found in the field on young tomatoes at Birmingham, on May 21. This is a month later than the first egg was found last season. The moths are not so numerous in the fields as they were last season and damage to tomatoes is not expected to be so severe as in the average season. Some tomatoes on the plants were half grown when the first eggs were found. On May 29 eggs were found in a cornfield about 100 yards from the tomato patch. The corn in this patch was only about 1 foot high and eggs were on the leaves.

Mississippi E. L. Cockerham (June 9): This insect continues its damage at Biloxi, attacking new corn and tomatoes. In addition to its injury to tomato fruits it is doing considerable damage tunneling vines and large stems.

Mississippi R. W. Harned (June 25): Larvae of the corn ear worm Heliothis obsoleta Fab., were received on June 1 from Dixon, where they were reported as eating the seed pods of hairy vetch. Specimens of this species were also collected on corn at Holly Springs, on June 2, and on corn and tomato at Carthage on June 19.

WHITE GRUBS (Phyllophaga spp.)

Indiana J. J. Davis (June 26): Whitegrubs reported as damaging strawberry at Elkhart May 27 and at Mulberry June 5. Apparently the same insects were damaging garden crops at Mishawaka June 18. Asilid larvae were reported very abundant in soil in St. Joseph County June 23 where grubs were abundant last year.

Illinois W. P. Flint (June 20): A number of reports of damage by white grubs have come in from the northern third of Illinois. Mr. Compton and Mr. Bigger recently made an examination of a number of grub-infested fields in northern and northwest-central Illinois. They report that the grubs are just starting to pupate and are working down somewhat in the soil. A very few newly formed, and some serious damage has occurred to early planted corn.

Wisconsin E. L. Chambers (June 15): A general complaint has been received from our crop-pest reporters throughout the State to the effect that these grubs are threatening to be as serious as last year. In this region they pupate about midsummer, and so little damage is expected after that date.

Nebraska

M. H. Swenk (May 15-June 15): White grubs had resumed activities sufficiently to be the cause of complaints of injury to bluegrass lawns, privet, hedges, and strawberry plants by May 22 and 23.

Kansas

J. W. McColloch (June 8): A strawberry bed at Alma has been ruined by grubs.

Iowa

Carl J. Drake (June 4): White grubs, Brood A, are doing a considerable amount of damage to early-planted corn in eastern Iowa. Many fields were seriously injured or even entirely destroyed by this brood last year.

WIREWORMS (Elateridae)

Massachusetts

A. I. Bourne (June 25): Wireworms have been very abundant on a variety of crops, notably on corn and tobacco in the Connecticut Valley. They have been the cause of an unusual number of complaints from the tobacco growers, who have in many cases had to reset areas for the second time, and in some cases the insect has made setting for the third time necessary. Apparently this is associated with the cold and persistent wet weather encountered this season. From our personal observation the lower fields and lower sections of other fields have been the worst infested. This, I believe, followed out the observations you have made personally on these insects.

New York

Weekly News Letter N. Y. St. Coll. Agr. June 4:
Onondaga County (W. E. Fields): Wireworms are busy in some corn and potato fields.

G. H. Griswold (June 28): Wireworms are attacking gladioli at Frankfort. They bore through stalk below ground and eat up and down tender shoots. Species undetermined.

Pennsylvania

C. A. Thomas (June 12): The larvae of Phelates agonus Say are now at their height and are doing considerable damage to cabbage and small beets in Philadelphia and Bucks Counties. Adults first appeared early in May.

Indiana

J. J. Davis (June 26): Wireworms were destructive to corn in low ground at Covington May 26. This field was in corn in 1925, in oats in 1926, in wheat in 1927, and in corn in 1928. They also damaged corn at Salem June 20.

Illinois

W. P. Flint (June 20): Wireworms have caused more damage than has been the case for a number of years. Reports of severe injury to corn have come in from all parts of the State with the exception of the extreme southern and northeastern counties. Damage has been reported on both high and low ground and to corn on several different rotations. Many cases have

been reported where corn was seriously injured on ground which was sown to wheat last fall and where the winter wheat was killed.

sconsin E. L. Chambers (June 15): In lowlands wireworms have been doing unusually serious damage during the past few weeks.

nsas J. W. McColloch (June 20): Injury to corn by wireworms was reported from Paola on May 23, Mankato on May 28, and Liberty June 6.

rth Carolina J. N. Tenhet (June 15): Adults of Monocrepidius vespertinus Fab., the tobacco wireworm are just beginning to emerge. The first individual was collected on a tanglefoot screen June 12. (June 23): Damage to tobacco by wireworms has been negligible this spring in the Chadbourn territory. (June 20): A small elaterid, M. bellus Say, is being collected in considerable numbers from the vicinity of strawberry fields at Chabbourn.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

io T. H. Parks (June 24): Examinations made yesterday south of Columbus in the Scioto Valley show the Hessian fly to be causing some green straws to lodge and the infestation is much heavier than expected. This is true even though practically no wheat was sown before the safe sowing date last fall. The insect infested only about 1 per cent of the straws last year at harvest time in this group of counties but this year will cause some economic loss. The weather has been very rainy during June with heavy showers almost every day. Wheat is late in maturing and very thick on the ground as a result of winter killing. (June 22): There are so few fields of wheat that escaped the winter freezing in western Ohio that those left are for the most part the earlier sown ones. Fears of Hessian fly damage were held. This does not seem to be the cause upon inspection though the annual wheat-insect survey will not start until July. Examinations made at Wooster, Ohio, show more Hessian fly present than last year with some of the straws lodged. We have had an abundance of rain during June.

braska M. H. Swenk (May 15-June 15): As the attack of the second spring (or early summer) brood of the Hessian fly has developed in the wheat crop, during June, it has become apparent that several other Nebraska counties, in addition to Saunders County have a general, but usually not heavy, infestation with this insect. The most serious report of injury came in middle June from Merrick County where the larger part of a 40-acre wheat field has become straw fallen because of the attack of

this pest. Given a summer with plenty of rainfall and a heavy growth of volunteer wheat and the Hessian fly can easily build up a menacing abundance in this State by the time of the appearance of the main fall brood of 1928.

CHINCH BUG (Blissus leucopterus Say)

Kansas

J. W. McColloch (June 20): There has been no damage by the chinch bug in the State to our knowledge. Abundant rainfall during the past few weeks has destroyed the few bugs present in the fields.

Mississippi

R. W. Harned (June 25): Specimens of the chinch bug were received on June 1 from Holly Springs. Only two infested plants were found in a 10-acre corn-field.

MEADOW PLANT BUG (Miris dolabratus L.)

Iowa

Carl J. Drake (June 4): The meadow plant bug Miris dolabratus, is doing serious damage in a few wheat fields in the southeastern portion of the State. One farmer near Muscatine reports that the insect is migrating from the adjoining fields and fence rows into a large wheat field, 50 acres, and destroying all the wheat in its path. This is the first report of serious injury to wheat in the State.

WHEAT STEM MAGGOT (Meromyza americana Fitch)

Iowa

C. N. Ainslie (June 25): White heads are appearing in many wheat fields in this vicinity (Sioux City) and farmers generally attribute these to Hessian fly attack. It has been so reported in the local press. The adults of Meromyza are numerous everywhere and they are always taken in every sweeping of grasses and grains. The loss from their injury to wheat will be nominal - a very small percentage.

Nebraska

M. H. Swenk (May 15-June 15): During the period from June 10 to June 15 a number of reports of the wheat stem maggot were received from different southeastern Nebraska counties, including Butler, Fillmore, Nuckolls, Kearney and Merrick Counties. In some cases as high as 30 per cent of the heads in the fields have been destroyed by this pest. This season will rank along with 1912, 1916, 1921, and 1927, as a year of serious losses.

Kansas

J. W. McColloch (June 1): The wheat stem maggot is said to have injured the wheat crop in Harper County about 2 per cent.

GREEN BUG (Toxoptera graminum Rond.)

Nebraska

M. H. Swenk (May 15-June 15): An infestation by the spring grain aphid or green bug in the oat fields of southeastern

Holt County was discovered early in June; the first case of this sort since 1922. It has destroyed some of the oats where it was working, but the trouble was neither extensive or severe.

WHEAT-SHEATH GALL JOINTWORM (Harmolita vaginicola Doane)

Ohio

T. H. Barks (June 22): Inspections made last week in Pickaway County showed numerous straws elbowed near the joint and stunted by the wheat sheath worm. This has been a pest in other years in eastern Ohio but I have never seen economic damage this far west in the State. Wheat was quite late in getting started this spring and many fields were sowed to oats. More information will be procured by the annual wheat insect survey.

A MIRID (Thyrillus pacificus Uhl.)

Washington

R. L. Webster (June 2): County extension agents in Adams and Franklin counties report injury to wheat, the insects moving to that crop from wild grasses.

CORN

STALK BORER (Papaipema nebris nitela Guen.)

Indiana

J. J. Davis (June 26): The stalk borer was reported as damaging corn at Stewartsville, May 30; Delphi, June 17; Hope, June 18; and Franklin, June 22. Tomatoes and sweet corn were damaged at LaFayette early in June. The same borer attacked blackberryshoots at Greenfield, June 16. Tomatoes were seriously damaged at Brownstown, June 23.

Iowa

Carl J. Drake (June 4): The stalk borer is very abundant in the State and at the present time is in the fourth and fifth instars. Specimens have been taken during the past year in every county in the State except two. The principal injury is done to oats, timothy, wheat, corn, and garden plants.

Nebraska

M. H. Swank (May 15-June 15): The first report of attack on corn by the stalk borer for the season was received on June 15.

Kansas

J. W. McColloch (June 20): The borer has caused some loss to corn again this year. Reports have been received as follows: Olsburg, May 23; Washington, June 1; Tescott, June 8; Lincoln, June 11; Burlington, June 13; Perry, June 14; and Manhattan, June 18.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Ohio

T. H. Parks (June 25): Several hundred corn borer larvae

collected in northern Ohio in March have been confined in cages at Columbus. These are now pupating, about 40 per cent having changed to pupae to date. No moths have yet emerged and there is no indication that the insect will be two-brooded in this latitude. Borers have been kept under outdoor conditions, receiving rainfall and moisture as though exposed on surface of open field.

A CORN STALK BORER (Hadena sp.)

Ohio

T. H. Parks (June 22): The Hadena stalk borer has been seriously damaging young corn in fields planted on timothy sod (spring plowed) in several eastern Ohio counties. The borers tunnel down the stalk and destroy it. Some fields have had to be replanted. One farmer in Carroll County plowed part of his timothy sod in the fall, a second part in late winter, and the remainder in late spring. The only damage that occurred was on the part plowed in the late spring. Fall and winter plowing seemed to control. Damage has been reported from Carroll, Tuscarawas, Jefferson, Harrison, and Portage Counties. These are all in eastern Ohio.

HOP VINE BORER (Gortyna immanis Guen.)

Massachusetts

A. I. Bourne (June 25): In early June Prof. Whitcomb of the substation at Waltham reported finding Lepidopterous larvae injuring corn in Middlesex County. He reported that these larvae were severely damaging about 30 per cent of the corn on one field. These larvae were identified for us at the National Museum as species of Gortyna, probably G. immanis Guen.

SOD WEBWORMS (Crambus spp.)

Ohio

T. H. Barks (June): Specimens of sod webworms were sent to this office with statement that they were destroying young corn plants and causing replanting.

Indiana

J. J. Davis (June 26): Webworms damaged corn in addition to the reports sent in last month from the following counties from May 28 to June 1: Grant, May 27; Jasper May 28; Miami, May 29; Bartholomew and Fountain, May 31; Morgan, June 1; St. Joseph, May 31. In all cases except St. Joseph County the insects were injuring corn. The report from St. Joseph County referred to them as feeding on mint. June 21 received full-grown sod webworms which were reported damaging corn in Starks County.

Illinois

W. P. Flint (June 20): Sod webworms have been much more abundant than usual in central Illinois this season. A very considerable amount of damage from these insects has occurred.

sconsin E. L. Chambers (June 15): Several different specimens of corn plants infested with one of the sod webworms have been received during the past week.

wa Carl J. Drake (June 4): Two species of sod webworms are very abundant in the southern portion of Iowa. Reports of serious injury to young corn have been received from Wayne, Page, Madison, and Mahaska Counties.

braska M. H. Swenk (May 15-June 15): Late in May a case of injury to a Fillmore County cornfield by the leather-colored sod webworm (Crambus trisectus) was reported to this office.

SUGARCANE BORER (Diatraea saccharalis Fab.)

issiana W. E. Hinds (June 20): The first generation of borers bred this spring is now becoming adult in the earliest planted corn especially, and eggs are beginning to be deposited for the second generation. The borer infestation appears to be unusually light throughout the cane belt of Louisiana.

xas J. N. Rovey (June 19): Most of the cornfields are now infested with the sugarcane borer in Liberty County.

CORN ROOT APHID (Anuraphis maidi-radiciis Forbes)

linois J. H. Bigger (June 15): Increased abundance of the corn root aphids this year following a wet season for two years during which weeds grew rank in the fields. Corn was seeded very early in this section in 1928.

CORN BILLBUGS (Sphenophorus spp.)

io T. H. Parks (June 22): The insect S. zeae damaged corn in a belt through the central and western counties. The first planting was a 25 to 60 per cent loss in most fields infested. Damage always followed timothy plowed for corn in the spring. Not all fields so handled were damaged. Soil type or drainage did not influence damage. The second planting was not seriously damaged where the first planting was not cultivated out. Inspections made by C. R. Neiswander and the writer June 14 showed that most of the billbugs had then left the fields and damage was over.

liana J. J. Davis (June 26): Reports of injury to corn by billbugs Sphenophorus parvulus Gyll., have been received from the following counties: Benton, May 28; Grant, May 27; Boone, May 26; Clinton, May 28; Parks, May 28. We have continued to receive reports of injury to corn by billbugs S. zeae, the last report being received June 4. During this period the following counties reported trouble: Grant, May 27; Boone, May 26; Blackford, May 4. Billbugs, Sphenophorus sp., (unidentified)

have injured corn. Reports received from Fountain County, May 31; Carroll County, June 2, and Madison County, June 4.

Harry F. Dietz (May 31): Reports of severe damage to corn by billbugs have been received from Rush, Howard, and DeKalb Counties, these reports all coming in since the 20th of the month.

Illinois

W. P. Flint (June 20): Damage by billbugs has been reported from many of the counties in the northern half of the State. In all cases damage was from some of the smaller species of billbugs, including the timothy billbug, and occurred to corn following timothy or blue-grass sod. Most of the reports of injury came in during the latter part of May and damage has practically ceased at this time. In a number of cases it was necessary to replant infested fields of corn.

Iowa

Carl J. Drake (June 4): Corn billbugs seem to be fairly common throughout southern Iowa. Reports of serious injury have been received from Decatur, Guthrie, Union, Monroe, and Clarke Counties.

Kansas

J. W. McColloch (June 20): Injury to corn was reported from Potwin on May 23 and from Ogden on June 5.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

Illinois

J. H. Bigger (May 26): Severe damage was done by adults of corn flea beetle during the week of May 21, in the western part of State. The attack was followed by cool weather which intensified the damage.

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Mississippi

H. W. Harned (June 25): One rather serious complaint in regard to the rough-headed corn stalk beetle or sugarcane beetle Euetheola rugiceps has been received recently. This complaint came from Hernando on June 8. The correspondent reported that the corn in one field had been completely destroyed by the beetles.

FALSE WIREWORMS (Eleodes sp.)

New Mexico

J. R. Douglass (June 11): Have received several reports of injury to corn and beans by the false wireworms throughout the Estancia Valley. Observations show that they are more abundant than cutworms.

SAND WIREWORM (Horistonotus uhleri Horn.)

Mississippi

R. W. Harned (June 25): On June 13 a correspondent at Neshoba sent to this office some corn plants, with the report that

the corn seemed to be dying in spots throughout one of his fields. These plants contained specimens of the corn and cotton wireworm Horistonotus uhleri. On June 14 specimens of this species were received from Poplarville with the report that the insects had destroyed three acres of corn.

CRANE FLIES (Tipulidae)

J. J. Davis (June 26): Tipulid larvae were abundant and reported cutting off corn at Anderson May 26, and at Delphi June 2.

GRASS

A CASE BEARER (Coleophora sp.)

J. J. Davis (June 26): A peculiar case-bearing lepidopterous larva was reported from Lapel, June 6, feeding on grass. The observer reported that its presence appeared as oats scattered in the vegetation. The adult has not yet been reared. (Mr. A. Busck reports that this is a new species of Coleophora.)

ALFALFA

A MARCH FLY (Bibio albipennis Loew.)

M. H. Swenk (May 15-June 15): During the period from May 15 to 25, quite a number of inquiries were made as to the meaning of a great abundance of March flies (Bibio albipennis) that were present in the alfalfa fields of northern and central Nebraska, where they had apparently developed in large numbers on the old decaying roots of winter-killed alfalfa plants.

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Monthly News Letter, Los Angeles Co. Hort. Comm., Vol. 10, No. 6, June 15, 1928. There is always a possibility of the alfalfa weevil being introduced on the potato sacks from Nevada where this pest is known to be present. This is a serious pest of alfalfa which does a large amount of damage in States where it is present but is not present in southern California.

PEA APHID (Illinoia pisi Kalt.)

J. J. Davis (June 26): On May 28, ladybird beetle larvae were reported very abundant in an alfalfa field at Rochester which had been damaged by the pea aphid.

J. E. Dudley, Jr. (June 23): The weather conditions were generally cool and rainy during June. Over 2.5 inches of rain have fallen in the last ten days. The natural enemies observed

were coccinellids, of first importance, syrphids beginning to become conspicuous and chrysopids beginning to appear.

Alfalfa swept on the 15th showed 384,00 per 7,500 sq. ft. No. sweeping possible in alfalfa since then on account of rain and wet foliage. Peas swept on 21st showed 9,400 per 1,900 sq. ft. On alfalfa just in blossom there is a decided scarcity of alate adults and immature stages showing wings. In pears just coming into bloom there is a large proportion of the winged forms.

Kansas

J. W. McColloch (May 28): This aphid is reported killing out a field of spring-sown alfalfa at Topeka.

CLOVER

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Indiana

J. J. Davis (June 25): The clover leaf weevil is common on alsike clover at Waveland May 28.

LESSER CLOVER LEAF WEEVIL (Phytonomus nigrirostris Fab.)

Ohio

T. H. Parks (June 22): The clover bud weevils are present as usual but the frequent rains of this month have stimulated growth of the clover, resulting in little damage from this insect. They are now from one-half to full grown larvae at Columbus.

Illinois

W. P. Flint (June 20): Examinations made by J. H. Bigger in western Illinois showed that 64 per cent of the clover buds in first-crop clover were infested by this weevil, and 37.6 per cent of the heads had been destroyed completely. These figures are based on examinations made in a number of fields in several different counties in western Illinois.

Examinations made on the University Farm at Urbana show an average of 84 per cent of the heads infested on June 8. At this time many of the weevil larvae were still quite small, and it is probable that at least as high as one per cent of the heads would be destroyed in eastern Illinois as is the case in the western part of the State.

F R U I T I N S E C T S

APPLE

APHIDIIDAE

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, and 25. Aphids are generally extremely scarce throughout the State reports having been

received from Columbia, Chautauqua, Onondaga, Clinton, Greene Orange, Dutchess, Genesee, Ontario, Monroe and Niagara Counties.

APPLE APHID (Anhis pomi DeG.)

Connecticut

M. P. Zappe (June 25): Aphids are very scarce and hard to find. A few eggs present in spring but now aphids are practically gone. Very much fewer compared with average year.

Indiana

Harry F. Dietz (May 31): In the Hancock County orchards green apple aphids are beginning to appear. Here the nine-spotted ladybird (Coccinella novemnotata Hbst.) and the spotted ladybird (Ceratomegilla fuscilabris Muls.), as well as the larva of Chrysopa were found.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York

Weekly News Letter N. Y. St. Coll. Agr. June 4. Clinton County (A. B. Burrell): Grain aphids seem to be multiplying rather rapidly and are numerous on the terminals in some orchards.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut

M. P. Zappe (June 25): Practically no aphids on apple trees.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4 and 25. During the early part of the month the rosy apple aphids were found quite plentifully in Orange, Greene, Monroe, and Niagara Counties. The remaining counties of the fruit belt reporting them as still very scarce; by the third week in the month, however, no really serious developments had taken place.

Indiana

Harry F. Dietz (May 31): Examination of orchards in Brown County show the presence of rosy apple aphids in small numbers. The adults of several species of ladybird beetles were found in all clusters of the plant lice. The two species that were most common were Coccinella novemnotata Hbst. and Adalia bipunctata L.

Bennet A. Porter (June 20): Infestations have varied from light to moderate, and are very spotted. Winged migrants have been appearing since early June.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4 and 11: Woolly aphids were recorded in small numbers during the early part of the month in Chautauqua, Orange, and Ontario Counties.

CODLING MOTH (Carpocapsa pomonella L.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11, and 25: During the first week in the month the earliest emergence of the codling moth adults were observed in Orange, Greene, and Columbia Counties. During this week no emergence was observed in the Lake counties. By the third week in the month eggs were found in Ulster County and general emergence was observed throughout the fruit belt.

Massachusetts

A. I. Bourne (June 25): Our first codling moth emerged in the breeding cages on May 25. In the orchard they were first observed on June 5, in the eastern part of the State, by Prof. Whitcomb, and a few days earlier at Amherst.

Ohio

T. H. Parks (June 13): Emergence is now at its height at Columbus, and about 50 per cent over. Has been in progress since May 18 with most individuals emerging from caged material since June 5. Spraying is being done at Columbus this week. (June 22): The emergence of adult codling moths from a field cage located at Ironton in southern Ohio as reported by L. A. Stearns commenced May 9, and was over except for a few stragglers May 24. The emergence from our screen cage out of doors at Columbus commenced May 23 and moths are still emerging June 22; 80 per cent of the moths emerged after June 4 with the highest emergence June 22. Nights were too cool for egg laying until June 10 since which they have been favorable.

Emergence at Oak Harbor (near Toledo) commenced June 8 with the maximum June 13 and emergence still going on. Spraying for central Ohio was advised the week of June 11-16 and for Lake Erie Counties June 15-25.

Indiana

Bennet A. Porter (June 20): Eggs started hatching in the field about June 1, but did not start hatching in numbers until about June 10. The cool, wet weather which has prevailed since petal fall has been unfavorable to the codling moth. Besides being unusually late, the infestations are unusually light thus far.

Nebraska

M. H. Swenk (May 15-June 15): The spring brood of the codling moth (Carpocapsa pomonella) began its emergence at Lincoln, and elsewhere in southeastern Nebraska, on May 23, and there were periods of heavy emergence from May 25 to 30, and again from June 5 to 15. The first eggs of the first brood of 1928 were taken on June 15.

United States

Monthly Letter of the Bureau of Entomology No. 169, May 1928. Of the 8,000 Ascogaster parasites of the codling moth collected at Yakima in 1927, over 4,000 have been distributed to other States, two lots each having been sent to Colorado and California, and one each to Oregon, New Mexico, and Arizona.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walker)

W York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11, and 25. Leaf rollers were generally numerous during the first week in the month throughout the entire fruit-growing sections of the State, and by the middle of the month were doing considerable damage in Ulster and Chautauqua Counties; by the third week in the month they were pupating in considerable numbers, but no second-generation adults had emerged prior to June 25.

CASE BEARERS (Coleophora spp.)

W York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agr. June 4, 11, and 25: Although case bearers were reported quite generally throughout the month, but little commercial damage was done with the exception of a few poorly-cared-for orchards.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

W York

Weekly News Letter, N. Y. St. Coll. Agr. June 4. Dutchess County (Ray Bender): A few skeletonizers have been seen. Greene County (A. S. Mills): Skeletonizer larvae were on many leaves in some orchards on May 28. (June 25): Monroe County (R. C. Coombs): Skeletonizers are completing the work started by the tent caterpillars in neglected orchards in the south of the county.

EYE-SPOTTED BUDMOTH (Spilonota ocellara Schiff.)

W York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agr. June 4, 11, and 25. Bud moths were reported from practically every county in the fruit belt and were generally estimated as being more numerous than usual. By the middle of the month they were pupating and by the end of the month adults were emerging in central New York.

GREEN FRUIT WORM (Graptolitha antennata Walk.)

W York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. State Coll. Agr. June 4, 11, and 25. The green fruit worm was prevalent throughout the month in Chautauqua, Ulster, and Columbia Counties.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

ine

H. B. Pierson (June 1): General throughout State. Infestation heavy as compared with average year.

W York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11, and 25: The eastern

tent caterpillars, though abundant in Dutchess and Chautauqua Counties, were not recorded as doing any commercial damage.

Pennsylvania

T. L. Guyton (June 21): The species is common in Wyoming and Lacawanna Counties.

Nebraska

M. H. Swenk (May 15-June 15): In an orchard in Dawson County during the first week in June the apple tree tent caterpillars stripped a number of the trees of their leaves.

FALL CANKER WORM (Alsophila pometaria Harr.)

Connecticut

B. H. Walden (June 22): Between 50 and 100 acres of woodland, largely black oak sprouts, nearly stripped. Also locally more abundant than in average season throughout the southern part of the State.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. State Coll. Agr. June 11 and 25: The latter half of the month cankerworms were recorded from Ulster, Chautauqua, and Monroe Counties, mostly in neglected orchards.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

New York

Weekly News Letter, N. Y. St. Coll. Agr. June 4: Chautauqua County (G. H. Salisbury): Tussock moth larvae are small and few in numbers.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Indiana

Bennet A. Porter (June 20): The first crawlers were observed June 15, abnormally late. On account of the abnormally high winter mortality very few first brood crawlers are to be found.

Wisconsin

E. L. Chambers (June 15): While the San Jose scale has become established in only a few towns it is spreading slowly each year where no effort has been put forth to control it. Seems worse compared with last month.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Massachusetts

A. I. Bourne (June 25): The oyster-shell scale began hatching June 13-14. On the latter date they were appearing in large numbers. This is somewhat later than the corresponding date last year.

APPLE REDBUG (Lygidea mendax Reut.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11 and 25: The apple redbug

has been reported throughout the month as doing more or less serious damage in Onondaga, Chautauqua, Genesee, Dutchess, and Columbia Counties.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

Weekly News Letter, N. Y. St. Coll. Agr. June 11. Orange County (Sidney Jones): Round-headed apple tree borers found on June 8.

A POWDER POST BEETLE (Lyctus sp.)

E. L. Chambers (June 15): Specimens of Lyctus sp. infesting young apple trees recently purchased from an out-of-state nursery were sent in by a farmer in Polk County.

IMBRICATED SNOUT BEETLE (Epicaerus imbricatus Say)

M. H. Swenk (May 15-June 15): On June 1 an abundance of the imbricated snout beetle was found in a young apple orchard in Lancaster County, south of Lincoln, where they were attacking the foliage of the trees.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Philip Garman (June 25): Reported as being abundant in the northern part of the State, in New Haven County.

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agr. June 4, 11, and 25. The European red mite was generally scarce throughout the State during June.

PEAR

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Weekly News Letter, N. Y. St. Coll. Agr. June 25: Rose leaf beetles are doing some feeding on Bartlett pears.

PEAR THRIPS (Taeniothrips inconsequens Uzel.)

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, and 11: Pear thrips are reported from Clyde and Chautauqua Counties.

PEAR PSYLLA (Psyllia pyricola Foerst.)

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11, and 25: By the first

week in the month practically all psylla eggs had hatched. The insect is generally distributed over the southeastern fruit section and appears to be about normally abundant.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4 and 11: Reports of damage by this insect were received during the first half of the month from Clyde and Chautauqua Counties.

PEAR MIDGE (Contarinia pyrivora Riley)

Massachusetts

A. I. Bourne (June 25): Prof. Whitcomb reports a record of the pear midge from Norfolk County. Just how serious and widespread this damage is he has not yet been able to determine but he intends to procure this information later.

Connecticut

W. E. Britton (June 25): The fruit of pears from Wallingford and New Wilford has been submitted with these maggots.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4 and 11: In the southeastern fruit counties, pear midge, is becoming increasingly serious. In some orchards over 50 per cent of the pears were destroyed by this insect.

QUINCE

QUINCE CURCULIO (Conotrachelus crataegi Wash)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 11 and 25: This insect was first observed in Orange and Ulster Counties during the first week and in Ontario County during the third week in June.

PEACH

PEACH BORER (Aegeria exitiosa Say)

New York

Weekly News Letter N. Y. St. Coll. Agr. June 11: The peach borer has been reported as injurious in Ulster County.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

Philip Garman (June 25): The insect is showing up on peach more in the north-central part of the State. If anything it is less abundant than last year. It is being parasitized by Trichogramma minutum Riley.

W Jersey

A. Peterson (June): In the vicinity of Moorestown the growing twigs in peach orchards, particularly on young trees, were heavily infested with oriental peach moth larvae the first two weeks in June. Fortunately 50 to 60 per cent or more have been parasitized by Macrocentrus ancylivora Roh. This parasite is proving to be a very efficient agent in reducing the infestations in the southern half of the State. It is probable that the second-brood larvae will be parasitized from 75 to 95 per cent as in previous seasons.

orgia

O. I. Snapp (June 16): A rather heavy infestation was found today in a home orchard in the town of Greenville. The infestation in the peach belt as a whole is much lighter than it was last year.

io

E. W. Mendenhall (June 12): A slight outbreak of the oriental peach moth in Clark County has occurred. On account of the backward season the moth is later in making its appearance.

OBLIQUE-BANDED LEAF ROLLER (Cacoecia rosaceana Harr.)

diana

J. J. Davis (June 26): The oblique-banded leaf roller was reported as eating in the fruit of peach at Mitchell June 22. This is an uncommon report.

PEACH AND PLUM SLUG (Eriocampoides amygdalina Rohwer)

ssissippi

R. W. Harned (June 25): Larvae tentatively identified by Mr. J. M. Langston as the peach and plum slug Caliroa amygdalina were collected on peach trees at Belzoni recently. They had caused only slight injury.

GREEN PEACH APHID (Myzus persicae Sulz.)

io

E. W. Mendenhall (June 8): The green peach aphids are quite abundant in the vicinity of Columbus and are doing some damage.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

diana

J. J. Davis (June 26): The shot-hole borer was apparently responsible for the death of apple and peach shoots by boring in at the base of the foliage and fruit spurs at Washington.

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

nnecticut

W. E. Britton (June 25): This insect has been reported as devouring the foliage of peach at Canaan.

COTTONY PEACH SCALE (Pulvinaria amygdali Ckll.)

New York

Weekly News Letter, N. Y. St. Coll. Agr. June 11: The cottony peach scale has developed egg masses in Niagara County.

CHEERRY

CHEERRY FRUIT FLY (Rhagoletis cingulata Loew)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4, 11, and 25: Adult flies began to emerge the first week in June in the southern part of the State though general emergence was not observed over this region until about the middle of the month, the peak having been reached in Ulster County on the 20th. No serious damage has yet been reported.

DARK CHEERRY FRUIT FLY (Rhagoletis fausta O.S.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agr. June 11 and 25: The first flies of this species were observed in Ulster County June 6 and by the end of the month they were present in large numbers throughout the State.

Michigan

R. H. Pettit (June 26): This is to notify you that this morning our field man, Mr. G. S. Tolles, reported the emergence of large numbers of the cherry fruit fly, R. fausta, at the town of Gobles in Allegan County. The cherries in the southern part of the State are beginning to color up now, but apparently it will be about 7 to 10 days before picking begins with the Early Richmonds. The canning associations and the county agents in the districts controlled by this cage have been notified by wire, in order that the final spray for the pest may be put on in time to catch the adults before they lay their eggs.

BLACK CHEERRY APHID (Myzus cerasi Fab.)

New York

Weekly News Letter N. Y. St. Coll. Agr. June 25: The cherry aphids are multiplying on both sweet and sour cherries in Ulster County.

Ohio

E. W. Mendenhall (June 8): The black cherry louse is quite bad in cherry leaves in the vicinity of Columbus. They are found on the under side of the leaves.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Nebraska

M. H. Swenk (May 15-June 15): The period from May 25 to June

15 has been attended with a great abundance of aphids of many kinds. The one that has been most complained of has been the rusty plum aphid, H. setariae, on plum and peach trees, especially the former. The area of greatest trouble seems to be in Hall, Adams, Webster, and Kearney Counties, though reports have been received from much of the South Platte area in Nebraska.

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

Connecticut

Philip Garman (June 25): The plum curculio was late in getting started this year but is fully as destructive to apple as in an ordinary season in New Haven County.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr., June 4, 11, and 25: The first adults began appearing late in May in the southeastern part of the State and by the middle of June serious injury was reported from all of the southeastern counties, and by the end of the month reports of similar damage were being received from central New York.

North Carolina

R. W. Leiby (June 23): The first-brood adults began emerging June 15 according to J. A. Harris. The peak of emergence will probably be reached about June 25. About 15 per cent of the larvae have been destroyed by Triaspis curculionis.

Georgia

O. I. Snapp (June 18): The first adult of the new generation emerged from the soil today. This is a very late first emergence date and only one generation is anticipated. Last year the first adult emerged on May 24.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 11: The American raspberry beetle is causing damage in raspberries and dewberries in Columbia County and is present in large numbers in most berry plantings in Wayne County.

RASPBERRY SAWFLY (Monophadnoides rubi Harris)

Indiana

J. J. Davis (June 26): The raspberry sawfly (det. from foliage injury) was abundant at North Manchester, June 9.

GRAPE

GRAPE TOMATO GALL (Lasioptera vitis O. S.)

New York Weekly News Letter N. Y. St. Coll. Agr. June 25: Gall insects which were found on grapes two weeks ago in Orange County have been identified as the grape tomato gall.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

New York Weekly News Letter N. Y. St. Coll. Agr., June 25: A grape berry moth was caught in Chautauqua County recently.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

New Jersey D. W. Webb (June 10): This insect was numerous and had completely eaten the white blooms of roses, peonies, and grapes at Pennington.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Kansas J. W. McColloch (May 28): Larvae of this species are reported as injuring grape foliage at Brookville.

GRAPE PLUME MOTH (Oxyotilus periscelidactylus Fitch)

New York C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr., June 4 and 11: Larvae of this insect are doing considerable injury to the foliage of grape in Ulster and Orange Counties.

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska M. H. Swenk (May 15-June 15): The grape leafhopper was reported injuring woodbine vines and grapes from various localities beginning May 25 and continuing to June 10.

GRAPE ROOT WORM (Fidia viticida Walsh)

New York Weekly News Letter N. Y. St. Coll. Agr. June 25: The grape root worm is mostly in the grub stage though some have begun to pupate (Chautauqua County).

Kansas J. W. McColloch (June 12): Beetles of this species are injuring the foliage of grapes at Wathena.

APPLE TWIG BORER (Amphicerus bicaudatus Say)

Nebraska M. H. Swenk (May 15-June 15): Another report of an abundance of the grape cane borer Schistoceros hamatus, in grapevines was received from Saline County during the third week in May.

CURRENT AND GOOSEBERRY

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

New York C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4 and 11: The imported current worm is present in most current patches in Chautauqua County, and an adult of this species was found on currents at Fostertown June 8.

Indiana H. F. Dietz (May 31): We have had reports of current worms doing serious damage to currents and gooseberries in the vicinity of Indianapolis on May 23.

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agr. June 4; The current aphid is present in variable numbers in Ulster County and present in most current patches in Chautauqua County.

BLUEBERRY

GOOSEBERRY FRUIT WORM (Zophodia grossulariae Riley)

Mississippi R. W. Harned (June 25): During the latter part of May larvae reported as causing injury to blueberry plants were sent to this office from Ocean Springs and Laurel. These larvae were tentatively identified by Mr. J. M. Langston as the gooseberry fruit worm. On June 22 additional larvae were received from Corinth where they were reported as injuring blueberry plants.

PECAN

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi R. W. Harned (June 25): On June 12 Inspector T. F. McGehee sent to this office some pecan leaves from Victoria, that apparently contained the eggs of the walnut caterpillar, Inspector G. I. Worthington sent to us on June 18 from Merigold some specimens of the walnut caterpillar with the information that they were the first ones he had seen this year.

Texas H. S. Adair (June 21): The walnut caterpillar is more abundant in this section (Brownwood) at this time than it has been in the past three years. Many trees are already

defoliated and the larvae of the first generation are still feeding. This pest is not often present in this section in sufficient numbers to attract attention. Where much damage occurs it is usually due to second or third generation larvae and the present infestation is considered somewhat unusual for this section.

PECAN BUD MOTH (Proteopteryx bolliana Sling.)

Mississippi

R. W. Harned (June 25): During the month of June many complaints have been received at this office regarding injury to pecan trees by the pecan bud-moth Proteopteryx bolliana. In almost every case these complaints were accompanied by specimens of this species. They have been received from the following counties: Tippah, Sunflower, Lee, Clay, Jackson, Hinds, Bolivar, and Washington. Inspector G. I. Worthington of Cleveland in Bolivar County wrote on June 20 as follows: "The most noticeable injury is to young grafted trees set last winter and the winter before. The worms are, however, attacking seedlings as I noticed infestations on nearly every pecan bush examined. Large trees show injury, but seem to suffer no noticeable set back."

GALLS (Phylloxera spp.)

Mississippi

R. W. Harned (June 25): Galls caused by Phylloxera seem to be abundant on pecan trees at various places in the State. Among the species recently received and identified by Mr. A. L. Hamner are Phylloxera caryaecaulis from Grace, Belzoni, and Cleveland, Phylloxera devastatrix from Satartia, Phylloxera notabilis from Collins, and a species that is probably new from Holly Springs, Raymond, Yazoo City, Shelby, and Natchez."

CITRUS

MEXICAN FRUIT WORM (Anastrepha ludens Loew)

Mexico

Monthly Letter of the Bureau of Entomology, No. 169, May 1928; F. H. Benjamin collected specimens of Anastrepha ludens in a sour orange which he picked from a tree in Matamoros, Tamaulipas, opposite Brownsville, Tex., on May 3, 1928. A thorough search during the growth of the crop of 1927-1928 failed to reveal any infestation in the fruit growing on the Texas side of the lower Rio Grande Valley.

A TENEBRIONID (Hymenorus obscurus Say)

Florida

J. R. Watson (June 18): During the last month there has been several outbreaks of a small elaterid beetle Hymenorus obscurus. This beetle has a habit of collecting in colonies

often composed of several thousand individuals and it generally feeds on the lichens on the trunks of trees, particularly on citrus and magnolia trees, but sometimes it does not content itself with this rather beneficial behavior but attacks the blossoms and young fruit and leaves of citrus. There has been an unusual number of complaints this year and in some sections the beetle seems to be unusually abundant and is found not only on the plants enumerated above but on oleander as well.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

lifornia Monthly News Letter, Los Angeles Co. Hort. Comm., Vol. 10, No. 6, June 15; Mr. H. M. Armitage, Deputy Horticultural Commissioner in charge of Los Angeles County Insectaries, this past month received a shipment of one of the new mealybug parasites from Australia. Propagation in the County Insectary of the *Tetrachemus* species has been carried on from this shipment and the progeny have been released in citrophilus mealybug infested groves in an attempt to secure their establishment in as many areas as possible. By June 16 the first generation of parasites had been produced and liberated and many more are to follow.

BLACK SCALE (Saissetia oleae Bern.)

lifornia Monthly News Letter Los Angeles Co. Hort. Comm. Vol. 10 No. 6, June 15, 1928: This season's hatch of black scale according to Mr. H. H. Wilcomb, Deputy Horticultural Commissioner in Los Angeles County in charge of fumigating and spraying, has been decidedly retarded during the last weeks of May and the first part of June. Although the black scale started to hatch much earlier than last season, especially in the San Fernando, Claremont-Pomona, and Rivera -Whittier sections, the hatch seemed to be practically at a standstill, in the latter part of May during the cool weather at that time. However, it is felt that as soon as the weather conditions change to more continuous warm days, the remaining young scale will hatch very rapidly in a short time.

The parasitism of black scale for this past season was at very much lower ebb than last year although the two major parasites, Scutellista cyanea and Aphycus lounsburyi could be found in all parts of the county. Their abundance and effectiveness was generally much less than for several years past.

TRUCK - CROP INSECTS

WESTERN GARDEN FLEA BEETLE (Phyllotreta pusilla Horn):

Nebraska

M. H. Swenk (May 15-June 15): During June reports of continued injury to garden truck by this flea beetle were received from Holt and Harlan Counties.

CARROT BEETLE (Ligyrus gibbosus DeG.)

Kansas

J.W. McColloch (May 26): Adults of this species have injured tomato and sweet-potato plants at Moscow.

BLISTER BEETLES (Meloidae)

Kansas

J. W. McColloch (June 4): Injury to potatoes is reported from Logan.

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

Texas

F. L. Thomas (June 7): This beetle destroyed all of the tops on a half acre of sugar beets near Beaumont. Also attacked tomato.

POTATO AND TOMATO

COLORADO POTATO BEETLE(Leptinotarsa decemlineata Say)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agr., June 25: The Colorado potato beetle has been reported in abundance from Genesee County and as appearing in Onondaga, Elba, and Ontario Counties.

Virginia

W. S. Abbott (June : The Colorado potato beetle has been more abundant at Vienna this season than for the past six or eight years.

Florida

H. W. Berger (June 22): In April a small but rather severe infestation was reported from just outside of Jacksonville. Another infestation on a farm at Dinsmore (about 10 miles northwest of Jacksonville) was sprayed. (Reported by Wm. Gomme.)

Alabama

L. W. Brannon (June 1): The Colorado potato beetle is doing considerable damage to potatoes, eggplants, and tomatoes in the district of Birmingham. Some truckers in this locality have been forced to spray tomatoes to control this insect.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Connecticut

W. E. Britton (June 25): The potato flea beetle is very abundant in the following counties: Shelton, Bridgeport, Danbury, Litchfield, Hartford, Holland, and New London.

New York Weekly News Letter, N. Y. St. Coll. Agri., June 25: Elba County (H. T. Cook): Potato flea beetles are very active.

Indiana H. F. Dietz (May 31): Potato flea beetles have been reported from Marion County as seriously destructive to potatoes and tomatoes.

Nebraska M. H. Swenk (May 15-June 15): During June reports of continued injury to garden truck by this flea beetle were received from Holt and Harlan Counties.

Utah G. E. Knowlton (June 6): The black flea beetles have been abundant throughout the principal sugar-beet sections of Utah during the spring. In many cases when the beets were very small their development was hindered by the beetles. Beets had to be replanted in a few fields because of this pest. As soon as beets attain fair size the damage is negligible.

BANDED FLEA BEETLE (Systema taeniata Say)

Indiana J. J. Davis (June 26): A striped flea beetle, probably Systema taeniata, destroyed 13 acres of recently transplanted tomatoes at Worthington, according to a report received on June 16.

POTATO STALK BORER (Trichobaris trinotata Say)

Indiana J. J. Davis (June 26): A stem borer answering the description of the potato stalk borer was damaging potatoes at Deputy on June 22.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Ohio T. H. Parks (June 24): Leafhoppers are now hatching in goodly numbers on potato leaves at Columbus. Indications are that some plantings will have a heavy infestation within another three weeks. This continues to be the most serious potato insect in Ohio.

Indiana J. J. Davis (June 26): The potato leafhopper damaged potato at Nappanee June 6.

CABBAGE AND CAULIFLOWER

IMPORTED CABBAGE WORM (Pieris rapae L.)

South Carolina W. J. Reid, Jr. (May 15): Only a comparatively small number of the larvae of the common cabbage worm have been noticed in the field this season.

Georgia O. I. Snapp (June 16): There is a heavy infestation of the imported cabbage worm at Fort Valley, causing damage to early cabbage.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

New York

C.R. Crosby and assistants, abstract from Weekly News Letter, N. Y. St. Coll. Agri., June 11: The cabbage maggot is appearing in abundance in Onondaga, Chautauqua, Erie, and Monroe counties.

Pennsylvania

C. A. Thomas, (June 12): Larvae have done much damage to cabbage in southeastern Pennsylvania this spring. Pupation is now beginning.

Connecticut

W. E. Britton (June 25): The cabbage maggot has been reported as attacking cabbage in about the average abundance from the following places: Hamden, East Haven, Bridgeport, Norwich, Southington, Thompsonville, and Litchfield.

Ohio

T. H. Parks (June): More damage than usual has been reported from the cabbage maggot.

Iowa

C. J. Drake (June 4): Serious injury by the cabbage maggot has occurred at Mason City, Clear Lake, Cedar Rapids, and Muscatine. This insect is a comparatively new pest in Iowa and seems to be increasing in numbers very rapidly.

Indiana

J. J. Davis (June 26): This insect was reported damaging radish at Logansport May 29 and Morocco, May 26. It was seriously damaging cabbage at South Bend May 31.

Wisconsin

E. L. Chambers (June 15): We have received more complaints concerning the injury of cabbage and cauliflower by the cabbage maggot this year than we have for a number of years. It seems to be very generally distributed.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

South Carolina

W. J. Reid, Jr. (May 15): Worms were found to be attacking and seriously injuring one-third of the plants in a 22-acre field of spring cabbage on the J. M. Harrison farm in the immediate vicinity of Charleston. An average of three worms was found on each plant. The young heads of the plants are being riddled by the worms, the plants suffering most being the younger ones which were set in the field to replace those killed by the winter freezes. Larvae of all sizes can be found on the plants. The moths are very numerous at this time. Reports of similar infestation of cabbage on other farms in the vicinity have come to the writer during the past few days.

Mississippi

R. W. Harned (June 25): On June 9 Inspectors Gladney and Kislanko sent to us some tiny pupae that were collected on turnip plants at Biloxi. The pupae proved to be those of the diamond-back moth.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

Indiana J. J. Davis (June 26): The zebra caterpillar was reported conspicuous on corn at Marion, June 16. Specimens were also sent in on the same date from McCordsburg. In the latter shipment there was no statement of the crop damaged but pea foliage accompanied the larvae. This same larva damaged sweet corn at Rockville June 23 and field corn at Franklin on June 25.

Nebraska M. H. Swenk (May 15-June 15): The zebra caterpillar was found injuriously attacking cauliflower at Lincoln on June 4.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Iowa C. J. Drake (June 4): Eggs of the harlequin bug were found on cabbage plants shipped from Texas to Grinnell, Iowa. There were quite a number of eggs and most of them seemed to be fertile.

Alabama L. W. Brannon (June 8): Harlequin-bug damage to turnips and cabbage in the district of Birmingham is very slight in comparison to what it was this time last season. Adults are very scarce.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Ohio T. H. Farks (May 28): These beetles were present on cabbage in Lawrence County and had fed on the leaves while a few larvae were found in the stems. This is the first year that we have received reports of damage in Ohio.

Indiana J. J. Davis (June 26): The cabbage curculio damaged cabbage at Battle Ground May 28.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Massachusetts A. I. Bourne (June 25): The asparagus beetle was found in fields May 27 and 28. They are about normal in abundance this season.

Connecticut W. E. Britton (June 25): The asparagus beetles are attacking asparagus in about the usual abundance in the following places: Farmington, Shelton, Bristol, and Enfield.

New York C. R. Crosby and assistants, abstract from Weekly News Letter, N.Y. St. Coll. Agri., June 4 and 25: The asparagus beetle has been reported as abundant in Chautauqua, Onondaga, and Dutchess Counties.

Iowa

C. J. Drake (June 4): Large numbers of the asparagus beetle have been found at Ames, Muscatine, and Des Moines. The beetle is migrating westward very rapidly and is doing a considerable amount of damage to young asparagus beds in the eastern part of the State.

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata L.)

Massachusetts

A. I. Bourne (June 25): The spotted asparagus beetle was found in the fields on June 1 and 2. There is about the normal abundance this season.

New York

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agri., June 25: The spotted asparagus beetle has been reported as quite plentiful in Chautauqua County.

BEANS

BEAN APHID (Aphis rumicis L.)

Nebraska

M. H. Svenk (May 15-June 15): Aphids that have been complained of during the period covered by this report include the bean aphid.

GREEN CLOVER WORM (Plathybena scabra Fab.)

North Carolina

W. A. Thomas (June 14): A light infestation of this insect is developing on snap beans in the vicinity of Chadbourn, but no appreciable damage is being done at this time. However, the early appearance of the larvae may presage serious injury to the coming soy-bean crop, the bulk of which is just being planted.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Maryland

W. T. Henery (June 25): First record for this locality (College Park). About 20 larvae were found on two plants. There were both first and second instar larvae present, but all were evidently from the same egg group. They were found on the place of W. A. White, attacking bush beans.

North Carolina

W. A. Thomas (June 14): The Mexican bean beetle has just made its appearance in Columbus County and is doing considerable damage in some fields in the vicinity of Chadbourn. Few adults are in evidence, while both larvae and pupae are very abundant in some fields.

R. W. Leiby (June 23): This pest is now very seriously damaging foliage of snap beans. It is just as it was last year but covers a much greater area.

Mississippi R. W. Harned (June 25): The first Mexican bean beetles to be received during 1928 were received on June 20 from Booneville, where they were reported as causing serious injury to garden beans. Those received were in the pupa stage.

Alabama L. W. Brannon (June 8): Truckers in the district of Birmingham were picking beans from the first crop on May 29. Bean-beetle damage to the first crop was so slight that it was hardly noticeable. Very little damage could be seen except in spots in the field where fourth-instar larvae were feeding. Overwintered beetles are still seen in the field and pupae are fairly numerous. First-generation beetles will emerge in about a week. Only 4.6 per cent have emerged in the hibernation cage. The peak of emergence was between May 17 and 21. The winter survival was the lowest of any season.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

North and South Carolina W. A. Thomas (June 4-5): The bean leaf beetle has been unusually abundant in the two Carolinas this season and in some places has almost completely defoliated the plants. The present outbreak began early in May and increased in severity up to about the first of June, when the beetles apparently began transferring to young cowpeas and early soy beans. More than a dozen beetles have frequently been jarred from a single bunch of beans. Serious injury was observed at Columbia, Sumter, Dalzell, Florence, Marion, and Mullins, S. C., and Chadbourn, Whiteville, Lake Maccansaw, Lumberton, Hamlet, and Marston, N.C.

CUCUMBERS AND MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Massachusetts A. I. Bourne (June 25): The striped cucumber beetle first began to appear in numbers on young squash and cucumbers June 17 and 18. They are now working in large numbers and are causing considerable injury to unprotected vines. From the evidence to date, I should judge they are about normally abundant.

Connecticut R. B. Friend (June 25): The striped cucumber beetle is much more abundant and destructive than last year on cucurbits at Hamden.

Indiana J. J. Davis (June 26): The striped cucumber beetle was very bad on cucumber at Forest June 15. May 31 it was reported entering greenhouses at Indianapolis and damaging cucumbers.

Wisconsin J. E. Dudley, jr. (June 23): Practically no beetles had been found in the field in Kenosha County up to the 21st of June, when they suddenly appeared in rather large numbers, from 6 to 8 being found on each hill of cucurbits. Beetles are late in putting in their appearance this year.

Nebraska

M. H. Swenk (May 15-June 15): Complaints of the striped cucumber beetle attacking cucumber, melon, and pumpkin plants began to be received on May 24 and 25 and have continued coming in at about the normal numbers throughout the period covered by this report.

Mississippi

R. W. Harned (June 25): Specimens of the striped cucumber beetle were received on June 6 from Meridian, where they were reported as injuring cantaloupe plants.

MELON APHID (Aphis gossypii Glov.)

Nebraska

M. H. Swenk (May 15- June 15): Aphids that have been complained of during the period covered by this report include the melon aphid.

SQUASH BUG (Anasa tristis DeG.)

Mississippi

R. W. Harned (June 25): Injury to cantaloupe plants by the squash bug was reported from Meridian on June 6.

SQUASH

SQUASH BORER (Melittia satyriniformis Hbn.)

Mississippi

K. L. Cockerham (June 9): This insect is now doing heavy damage to the early squash crop. Full-grown larvae are found in the stalks and adults are frequently seen flying about the patches.

SQUASH BEETLE (Epilachna borealis Fab.)

North Carolina

J. N. Tenhet (June 15): The squash ladybird is appearing earlier than usual on cucurbits in the vicinity of Chadbourn this spring and in considerably greater numbers.

PICKLE WORM (Diaphania nitidalis Stoll)

Georgia

O. I. Snapp (June 16): Infestations by the pickle worm are very heavy on squash at Fort Valley, considerable damage being done.

Mississippi

K. L. Cockerham (June 9): These insects are now doing rather serious damage to squash and cucumber, being especially serious on squash.

ONIONS

ONION MAGGOT (Hylemyia antiqua Meig.)

New York

C. R. Crosby and assistants, abstract from Weekly News Letter

N. Y. St. Coll. Agri., June 25: Injury by the onion maggot is evident in Elba and Wayne Counties.

E. W. Mondenhall (June 20): The onion maggot is quite bad this year in the onion plantations in Hardin County.

J. J. Davis (June 26): The onion maggot has been apparently more abundant and destructive than usual. Reports of damage have been received as follows: Morocco, May 26 (pupae received); Rensselaer, June 3; Plymouth, June 6; Elkhart, June 6; Warsaw, June 8; and Angola, June 11.

J. E. Dudley, jr. (June 16): Infestations on onions have been unusually late in developing and the maggots are found much deeper in the soil than usual, the majority being at from 4 to 6 inches underground. In one count of 3 feet of culls there were 760 puparia and 80 larvae procured.

E. L. Chambers (June 15): Many complaints have been received from various sections of the State to the effect that this pest is doing more injury than usual to the onion crops. Reports have been received from Racine, Kenosha, Milwaukee, and Rock Counties.

C. J. Drake (June 4): The onion maggot has been reported from Pleasantville Valley and Clear Lake but does not seem to occur in destructive numbers.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

M. H. Swenk (May 15-June 15): Aphids of this species attacking turnip have been complained of during the period covered by this report.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

L. W. Brannon (June 8): This insect is continuing to do considerable damage to turnips and young collards in the vicinity of Birmingham. In some cases the damage to turnips is so severe as to make them unmarketable. I observed a patch of young collards just sprouting that were damaged so severely that replanting was necessary.

BEET

SUGAR BEET ROOT MAGGOT (Tetanops aldrichi Hendel)

G. F. Knowlton (June 6): Tetanops aldrichi Hendel is doing

considerable damage in some fields at Hooper. The affected beets wilt badly during the heat of the day and the more seriously affected ones die. Many of the beets are dead, leaving noticeable skips in the rows. At Hooper many of the maggots are half to full grown. At Cornish the flies are abundant and mating.

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

New York

Weekly News Letter, N. Y. St. Coll. Agri., June 11: Erie County (M. N. Taylor): The spinach leaf miner has started to work on spinach, and growers carrying out the screening experiments have applied the cheesecloth.

Utah

G. F. Knowlton (June 6): The beet leaf miner is encountered in fields throughout the beet-growing areas of Utah but in such small numbers as to be causing practically no damage.

SWEET POTATO

SWEET-POTATO FLEA BEETLE (Chaetocnema confinis Cr.)

Mississippi

R. W. Harned (June 25): Flea beetles that were injuring sweet-potato plants at Nicholson on June 1, were received at this office and identified by Mr. J. M. Langston as Chaetocnema confinis.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO BUDWORM (Heliothis virescens Fab.)

North Carolina

R. W. Leiby (June 23): The tobacco budworm seems to be unusually destructive this season. More tobacco has been poisoned than ever before.

POTATO TUBER WORM (Phthorimaea operculella Zell.)

Florida

F. S. Chamberlin (June 6): Very few tobacco splitworms have been observed on tobacco in Gadsden County this season.

HORN WORMS (Phlegethontius spp.)

North Carolina

R. W. Leiby (June 23): Horn worms are unusually destructive this season in the tobacco section of the Coastal Plain.

RICE

A PYRALID MOTH (Chilo simplex Butler)

Hawaiian
Islands

R. H. Van Zwailuenburg (May 21): On March 1, 1928, the attention of Mr. D. T. Fullaway was called to the infestation of rice plants near Honolulu by larvae of a pyralid borer, since determined as Chilo simplex Butler. Between 1,500 and 2,000 acres of rice are now known to be infested, all confined to the Island of Oahu. The insect was first noted by Chinese growers in October, 1927, but they failed to bring it to the attention of any of the entomologists. Adults, larvae, and pupae were found during March, 1928, the oldest rice in any one district being the most heavily infested. By April, adults were common among the plants in the field. The eggs are laid in small overlapping clusters either on the leaf blade or hidden between the leaf sheath and the main stalk. An idea of the severity of infestation of rice in some fields by April can be gotten from the record of between 40 and 50 adult moths reared from two stools brought in from a heavily infested paddy. Half-grown larvae in the insectary attack sugarcane and corn readily, eventually causing the death of the young plants. Examinations of cane and grass lands immediately adjacent to heavily infested rice paddies have, to date, failed to show infestation by this species in sugarcane or wild grasses.

F O R E S T A N D S H A D E - T R E E I N S E C T S

P E R I O D I C A L C I C A D A (Tibicina septendecim L.)

Connecticut

W. E. Britton (June 25): The periodical cicada has emerged slowly owing to cool, moist weather. All reports are not in yet. The insects are chiefly on rocky ridges in the south-central portion of the State, being reported from New Haven, Hamden, Woodbridge, Cheshire, Wallingford, North Branford, Beaufort, New Britain, Guilford, Meriden, and Southington.

New York

W. J. Meagher (June 25): I am overrun with the 17-year locust at my place in the country in Orange County.

J. N. Knull (June 21): Adults present at Greenwood Lake June 21.

Stern & Meinstein (June 16): We have a large tract of ground in Valley Cottage and it is swarmed with locusts.

O. F. Rocklein (June 13): This insect is appearing in great numbers at Great Kills, Staten Island.

C. R. Crosby and assistants, abstract from Weekly News Letter N. Y. St. Coll. Agric., June 4, 11, and 25: This insect has been reported from the following counties: Dutchess, Orange, Greene, Ulster, and Columbia.

E. Kostal & W. H. Freeman (June 3): A single emerged specimen was found in the vicinity of Tottenville, Richmond County, on May 30, several more on June 2, and a larger number on June 7.

H. E. Gamgee (June 19): We are having quite an epidemic of the 17-year locusts on Staten Island.

Lucy Upton (June 11): The 17-year locust is found in enormous numbers at the Baltusrol Golf Club, Springfield.

New Jersey

W. H. Ballou (May 30): Indications of the 17-year locust are noticed at Alpine Road.

Mrs. C. J. Sourbier (June 3): The 17-year locusts are emerging at Westfield.

D. W. Webb (June 10): I have noted the insect in the following places: Bargaintown, Glassboro, Maplewood, Plainfield, Scotch Plains, Carteret, and New Brunswick.

C. A. Thomas (June 12): I drove across New Jersey to the ocean and returned via Lakehurst and Browns Mill June 10 and did not see any specimens of this insect, although they were reported a week ago from near Vineland, and earlier from Connecticut.

Pennsylvania

J. N. Knull (June 21): Adults are present at Windgap. Eggs were first observed June 14 at Dauphin, Clarks Valley.

H. M. Cyr (June 20): This year there are numerous swarms of locusts on the outskirts of Palmerton and elsewhere in Carbon County. At the present date there are a few stragglers still issuing from the ground, although for the past week mating has been numerous and scars from egg-laying have already appeared on the trees.

C. A. Thomas (June 12): I have not seen a single specimen at Bustleton, although it is about two weeks overdue. I have not seen any in Chester County.

Virginia

W. S. Abbott (June 12): The pupal case of a cicada was found in a grove at Fairfax on May 27.

Mississippi

R. W. Harned (June 25): A very interesting collection was made at Yagoo City, on May 29, by Inspector Chesley Hines, when inside one of his boll weevil cages there emerged a fe-

male of the 13-year periodical cicada. This belonged to Brood XXVII of the periodical cicada. The only times that this brood has previously been recorded from any point in the United States, were in 1902, when it was reported as appearing on May 20 at Suffolk, Franklin County, Miss., and thirteen years later, in 1915, when this brood was seen again at this place.

BAGWORM (Thyridopteryx ephemeraciformis Haw.)

J. J. Davis (June 26): The bagworm was reported from Terre Haute on June 15.

J. W. McColloch (May 15-June 15): Bagworms are reported abundant on cedar trees at Westmoreland and Baxter Springs.

APHIDIIDAE

M. H. Swenk (May 15-June 15): The period here covered has been one marked by the abundance of aphids.

MITES (Eriophyes spp.)

M. H. Swenk (May 15-June 15): The period here covered has been one marked by an abundance of gall mites.

FALL WEBWORM (Hyphantria cunea Drury)

R. W. Harned (June 25): The fall webworm is beginning to show up in various parts of the State. The first specimens received at this office were from Moss Point, sent in on June 6. Recently specimens have been received from Holly Springs, Yazoo City, and Cleveland. In each case the specimens came from pecan trees. Inspector T. F. McGhee of Holly Springs reported on June 23 that the webworms were abundant in Benton, Marshall, and LaFayette Counties, especially on persimmon trees, although some pecan, walnut, and hickory trees were found infested.

CECROPIA MOTH (Samia cecropia L.)

M. H. Swenk (May 15-June 15): An unusual number of identification inquiries concerning the cecropia moth were received this spring between May 21 and June 12.

LEAF BEETLES (Galerucella spp.)

E. L. Chambers (June 15): There appear to be two distinct species of Galerucella doing serious injury in spots over the State where they have appeared in extremely large numbers and defoliated many trees. They began appearing near Racine in the last week of April and have continued appearing in outbreak numbers up until the present date when they are being

reported serious in the extreme northern part of the State. Specimens have been taken on raspberry and currant bushes where complete defoliation was reported. These beetles appeared in such large numbers at Green Bay and Sturgeon Bay that the County Board of Door County appealed for aid with an airplane such as was used by this department two years ago against the hemlock sawworm.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Indiana

J. J. Davis (June 26): The oyster-shell scale began hatching on lilac at LaFayette June 2, and was reported as killing ash at Aurora June 16.

ARBORVITAE

ARBORVITAE LEAF MINER (Argyresthia thuiella Pack.)

Connecticut

W. E. Britton (June 25): This insect has not been very destructive since 1921 but is now causing injury to arborvitae in the locality of Union City south of Waterbury. The trees are brown.

ASH

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Nebraska

M. H. Swenk (May 15-June 15): The borers most complained of during the period covered by this report included Chrysobothris femorata on ash trees.

BANDED ASH BORER (Neoclytus capraea Say)

Nebraska

M. H. Swenk (May 15-June 15): Neoclytus capraea has been reported as attacking ash trees during the period covered by this report.

ASH BORER (Podosesia fraxini Lugger)

North Dakota

C. N. Ainslie (June 22): The young ash trees set for shade in town yards and streets in Beach, Mott, and Dickinson are being attacked, and in some cases killed, by this pest. As many as twenty emergences of moths from one small tree have been noticed. No trace of attack can be found in trees growing wild in ravines. This injury has been apparently increasing in recent years.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Nebraska M. H. Swenk (May 15-June 15): There was a revival of complaints from housekeepers concerning the boxelder bug about the middle of June.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Boisd.)

New Jersey D. W. Webb (June 18): We have had a report of complete defoliation of catalpa trees at Burlington.

CHESTNUT

GIANT APHID (Longistigma caryae Harr.)

Indiana J. J. Davis (June 26): The large aphid Longistigma longistigma was reported abundant on chestnut at Brownstown June 8.

ELM

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

Indiana J. J. Davis (June 26): The elm cockscomb gall was reported common at Frankfort June 13.

Nebraska M. H. Swenk (May 15-June 15): Cockscomb gall aphids have been complained of recently.

WOOLLY ELM APHID (Eriosoma americanum Riley)

Nebraska M. H. Swenk (May 15-June 15): The woolly elm aphid has been complained of this month.

ELM BORER (Galleria tridentata Oliv.)

Nebraska M. H. Swenk (May 15-June 15): The elm borer has been complained of during the period covered by this report.

ELM SAWFLY (Cimbex americana Leach)

Massachusetts A. I. Bourne (June 22): The elm sawfly first appeared on the elms May 20-22. They are particularly numerous on camper-down elms on the campus at Amherst.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

- New York Weekly News Letter N. Y. St. Coll. Agri., June 4: Orange County (P. J. Parrott): The European elm scale is damaging elm at Monroe.
- Indiana J. J. Davis (June 26): The European elm scale was reported as abundant on elm at Marion June 23.
- Wisconsin E. L. Chambers (June 15): Solid blocks of elm trees in Madison and Milwaukee streets are heavily infested with this scale and many show serious injury, some being killed where no control measures have been applied. This insect is more abundant this month than last, and more abundant than last year.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis Rathv.)

- Ohio E. W. Mendenhall (June 26): The soft maple shade trees in Springfield are infested somewhat with the cottony scale. These are bad in certain localities at Springfield.
- Indiana H. F. Dietz (May 31): The cottony maple scale has been reported as unusually abundant in the southern part of Indianapolis and also from Noblesville. The formation of the egg masses is just beginning to take place.
- J. J. Davis (June 26): The cottony maple scale was reported showing up at Treherne June 14, at Marion, Elwood, and Sedalia June 18, and at Gary June 22. So far no hatching has been observed.

OAK

CORK OAK MIDGE (Plagiotrochus suberi Weld)

- California Monthly News Letter Los Angeles Co. Hort. Comm. Vol. 10, No. 6, June 15, 1928: Early in 1927 a severe injury to several fine cork oaks on a private estate in Los Angeles was found to be caused by a small midge which lays its eggs in the new twig growth, causing a swelling and dying of the twigs. Specimens were taken by Mr. Harold J. Ryan, Los Angeles County Horticultural Commissioner, and sent to Dr. Alfred C. Kinsey of Indiana University, a specialist on this type of insect. Dr. Kinsey determined the specimens as the cork oak midge, Plagiotrochus suberi Weld. He stated that the insect was undoubtedly imported from Europe, and had been taken from San Jose, Santa Clara, San Francisco, and Pasadena - in every case on the European cork oak. Since that time inspections made by Mr. L. E.

Myers, Horticultural Inspector for the county office, has disclosed other infestations at rather widespread localities. Apparently the insect has occurred for a number of years in California but has spread rather slowly, as it seems to attack only the cork oak, which has been planted in a number of different localities but does not occur generally. The native oaks do not seem to be attacked by this insect, and it is Dr. Kinsey's opinion that there is no reason to suppose it will attack them. There are, however, a number of native insects that do cause damage similar to this upon the native oaks, and which may be controlled when the trees are not too large or too numerous.

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut

W. E. Britton (June 25): This pest is spreading eastward over the State attacking Scotch pine. (Hartford given as locality.)

NANTUCKET PINE MOTH (Rhyacionia frustrana Comst.)

Mississippi

R. W. Horned (June 25): On April 24 Inspector J. P. Kislanko sent to this office some larvae that were found injuring the tips of pine twigs at Ocean Springs. One adult moth was reared which has been identified by Mr. August Busck of the U. S. National Museum as Rhyacionia frustrana. On June 19 Inspector R. P. Colmer sent to us some pine twigs from Moss Point that showed similar injury although no insects could be found in the twigs.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Massachusetts

A. I. Bourne (June 25): The first young of the pine leaf scale were appearing on May 28 and 29.

Wisconsin

E. L. Chambers (June 15): Blister-rust scouts have turned in many specimens of this pest in some sections of Monroe and Sauk Counties, where it seems to be appearing more plentifully on pine during the past few years.

Nebraska

M. H. Swenk (May 15-June 15): Several complaints of injury to spruce trees by the pine leaf scale were received during the period covered by this report.

A SAWFLY (Neodiprion sp.)

Connecticut

M. P. Zappe (June 21): This insect is more abundant than for several years. Many places pitch pines are completely defoli-

ated but large trees still have some leaves left. It has been reported from Unionville, Plainville, and Branford.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Indiana

J. J. Davis (June 26): The spruce budworm was reported as damaging blue spruce and, to some extent, Norwegian pine at Cambridge City May 31.

A CURCULIONID (Thylacites incanus L.)

Massachusetts

A. I. Bourne (June 25): There was brought to our attention in early June a report of beetles occurring in considerable numbers in a nursery in the eastern part of the State. Evidently the beetles were reported as causing considerable injury to blue spruce. Further examination brought out the fact that the beetles were working on practically all of the spruce as well as on most of the pines, except white pine. Specimens of these beetles were identified by H. S. Barber as Thylacites incanus L., apparently a new species to the country.

EASTERN SPRUCE BEETLE (Dendroctonus piceaperda Hopk.)

Maine

H. B. Peirson (June 1): A large outbreak started about 1922 in the north-central part of the State, but has just been located. The insects occur in the inaccessible large spruces.

Olethreutidae

Maine

H. B. Peirson (June 1): A species of Olethreutidae is attacking red spruce at Booth Bay and south along the coast.

SPRUCE SAWFLY (Neodiprion abietis Harr.)

New York

Weekly News Letter N. Y. St. Coll. Agri., June 25: Clinton County (A. E. Burrell): A sawfly larva that defoliated most of the pitch pines of this section last year is busily at work again this season. It was identified last year as a species not hitherto reported from New York State. Occasionally it attacks white pine standing near pitch pines.

SPRUCE GALL APHID (Adelges abietis L.)

New York

Weekly News Letter N. Y. St. Coll. Agri., June 11: Orange County (Sidney Jones): The spruce gall aphid is doing injury to spruce near Monroe.

SPRUCE MITE (Paratetranychus unimaculis Jacoby)

New York

Weekly News Letter N. Y. St. Coll. Agri., June 4: Orange County (Sidney Jones): Several spruce trees in Middletown are quite badly infested with the mite and some of the trees are turning brown.

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Wisconsin

E. L. Chambers (June 15): The inner branches of blue and Norway spruce show unusually heavy infestations of this pest.

SPRUCE BUD SCALE (Physokermes piceae Schrank)

Wisconsin

E. L. Chambers (June 15): All junipers and spruce trees in certain solid blocks have been attacked with a light infestation which is gradually growing worse.

WILLOW

SATIN MOTH (Stilpnotia salicis L.)

Maine

H. B. Peirson (June 15): This insect has been reported as attacking poplars and willows at Bar Harbor and southward in more than normal abundance.

A WEEVIL (Orchestes rufipes Lec.)

Maine

H. B. Peirson (June 15): This insect has been reported as attacking laurel-leaf willow on Kennebunk beach and has also been found on Celastrus scandens. It is more abundant than last year.

I N S E C T S A F F E C T I N G G R E E N H O U S E A N D
O R N A M E N T A L P L A N T S A N D L A W N S

NEGROBUG (Thyreocoris pulicarius Germ.)

Mississippi

R. W. Harned (June 25): Negrobugs belonging to the species Thyreocoris pulicarius were abundant on aster and snapdragon plants at Grenada on June 20.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Nebraska

M. H. Swenk (May 15-June 15): During the first week in June an Omaha florist reported a heavy infestation of the chrysanthemum midge in his greenhouse.

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gyll.)

Nebraska

M. H. Swenk (May 15-June 15): The chrysanthemum aphid has been complained of during the period covered by this report.

THRIPS (Thysanoptera)

New York

Weekly News Letter N. Y. St. Coll. Agri., June 4: Orange County (Sidney Jones): Thrips have been doing damage to chrysanthemums in a greenhouse in Middleton.

COLUMBINE

COLUMBINE LEAF MINER (Phytomyza aquilegiae Hardy)

Indiana

J. J. Davis (June 26): The aquilegia leaf miner was very destructive to commercial plantings of aquilegia at Whiting June 1

DELPHINIUM

CYCLAMEN MITE (Tarsonemus pallidus Banks)

New York

G. H. Griswold (June 28): A mite, probably the cyclamen mite, has been sent to this office. Infestation appears to be serious judging from material sent in. These mites are attacking larkspur at Frankfort.

ELDERBERRY

SPINDLE WORM (Achatodes zeae Harr.)

Wisconsin

E. L. Chambers (June 15): Ornamental varieties of elder growing in parks and nurseries in various sections of the State have been badly infested with this borer this spring. More than a dozen complaints have been received during the past week.

A MITE (Eriophyes sp.)

Nebraska

M. H. Swenk (May 15-June 15): Witches broom on hackberry has been especially complained of.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Indiana

H. F. Dietz (May 31): The eggs of the iris root borer began to hatch at Indianapolis on April 30, and hatching has continued until the 25th of May. Reports from Indianapolis indicate that this pest is as abundant this year as it was last.

J. J. Davis (June 26): The iris borer was reported as injurious to iris at Green Castle June 25.

sconsin

E. L. Chambers (June 15): A planting of iris in Sparta was found infested with the iris borer last week and several other infestations have been reported by our pest reporters.

IVY

IVY APHID (Aphis hederæ Kalt.)

ssissippi

R. W. Harned (May 29): This aphid was reported on ivy at Greenwood on May 8.

PHLOX

RED SPIDER (Tetranychus telarius L.)

diana

J. J. Davis (June 26): The red spider was reported damaging phlox at Hanover June 22.

PRIVET

A LEAF ROLLER (Cacoecia rosana L.)

nnecticut

W. E. Britton (June 25): This insect has been reported as attacking privet hedges at New Haven. It seems to be more abundant than usual.

ROSE

ROSE SAWFLY (Caliroa aethiops Fab.)

diana

H. F. Dietz (May 31): The rose sawfly has been commonly reported from Indianapolis since May 24.

B. A. Porter (June 20): Rose bushes near the Vincennes laboratory were partially defoliated by the first brood. Adults of this brood were observed in great numbers June 15.

J. J. Davis (June 26): The rose slug was reported as damaging roses at Connersville June 25.

nsas

J. W. McColloch (June 26): The rose slug has been injurious at Manhattan, Hays, Haddam, and Topeka during the past month.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Maryland

J. A. Hyslop (June 12): This flea beetle is in every flower in my rose garden near Silver Spring attacking hybrid tea and hybrid perpetual roses, disfiguring the petals. There are from one to six beetles in every blossom.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Indiana

J. J. Davis (June 26): This rose bug was reported as damaging iris and the foliage and fruit of apple at Michigan City June 9 and roses at South Bend June 12. On June 18 these beetles were causing the death of young chickens at Medaryville. Green peach were being damaged by these beetles at Goshen June 25.

FLOWER THRIPS (Frankliniella tritici Fitch)

Mississippi

R. W. Harned (June 25): Many complaints have been received during the past few months regarding the injury by thrips to roses. Specimens identified as Franklinella tritici have recently been received from Drew, Yazoo City, and Scoby.

GALL WASPS (Rhodites spp.)

Nebraska

M. H. Swenk (May 15-June 15): The present spring has been one favorable to gall wasps as well as to aphids and gall mites. From Kearney County west to Redwillow County reports of unusually common infestations of roses by the galls of Rhodites nebulosus were received; while in eastern Nebraska similar reports were received of an unusual abundance of the spiny rose gall, Rhodites bicolor.

SPIRAEA

SPIRAEA APHID (Aphis spiraeicola Patch)

Indiana

J. J. Davis (June 26): Spiraea aphids were very abundant at Cory June 12.

H. F. Dietz (May 31): The spiraea aphid is very abundant on Spiraea vanhouttei.

VIBURNUM

SNOWBALL APHID (Aphis viburnicola Gill.)

Nebraska

M. H. Swenk (May 15-June 15): The snowball aphid has been complained of during the period covered by this report.

ZINNIA

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

North Carolina J. N. Tenhet (June 10): Fuller's rose beetle is damaging zinnias in gardens in the locality of Chadbourn. It was recorded here last spring as damaging soy beans. It would seem that there is a possibility of its developing into an economic pest.

A WHITE GRUB (Phyllophaga cribrosa Lec.)

Texas F. L. Thomas (June 11): A correspondent at Big Spring reported this insect destroying zinnia plants.

LAWNS

ANTS (Formicidae)

Indiana J. J. Davis (June 26): Ants in lawns and gardens have been very abundant throughout the State. During the past month we have received reports from Muncie, Gary, Frankfort, Elkhart, South Bend, Indianapolis, LaFayette, Salem, Richmond, Plymouth, Ft. Wayne, and Evansville. They were reported actually destroying strawberry and other plants in several cases.

Wisconsin E. L. Chambers (June 15): There have been more complaints from ants entering houses and working in lawns this year than we have received for several years.

Nebraska M. H. Swenk (May 15-June 15): All over eastern Nebraska, from the latter part of May to the middle of June, soil-infesting ants have been proving to be a great nuisance in the bluegrass lawns and flower gardens and have been the cause of many inquiries as to control.

BLACK HOUSE ANT (Monomorium minutum Mayr)

Ohio E. W. Mendenhall (June 8): I find the black ants, which are a great nuisance, prevalent in gardens and lawns.

Mississippi R. W. Harned (June 25): Dr. M. R. Smith reports that during the period from May 31 to June 6 winged males and wingless females of the tiny black ant, Monomorium minimum were observed mating on the ground or on weeds in the vicinity of the parental nests. These observations show that a nuptial flight for mating is not absolutely necessary in this species, and without doubt the males pair with their sisters. The workers of this species have been the source of complaint from housekeepers in Columbus, West Point, Starkville, and other towns.

CUTWORMS (Noctuidae)

Nebraska

M. H. Swenk (May 15-June 15): Toward the middle of June information was received that many of the lawns of Vernango, Perkins County, were being destroyed by whitish brown-headed cutworms, resembling very much the pale western cutworm that we have not been able to identify specifically.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

FLEAS (Siphonaptera)

Indiana

H. F. Dietz (May 31): The first report of fleas in dwellings was received on May 26.

Georgia

Department of Health, Atlanta (June 21): We are receiving numerous calls and complaints about fleas throughout the City of Atlanta. These insects do not seem to come from animals of any sort, as they appear in great numbers under and in the houses where no dogs, cats, or other animals are kept or have been kept for quite a period.

Florida

F. C. Bishopp (June 7): Report of an outbreak of fleas at Ocala.

CLOVER MITE (Bryobia praetiosa Koch)

Ohio

T. H. Parks (June 12): Specimens were sent to this office with the statement that these mites were making life miserable for occupants of a house in London, rooms having been infested for some time.

(Ichneumonidae)

Indiana

J. J. Davis (June 26): An ichneumon fly was sent in from Red Key May 26, where it was reported as stinging a baby and causing much suffering.

A GNAT (Hippelates flavipes Loew)

Texas

D. C. Parman (June 3): On June 3, lunch was had under shade trees along the creek just out of Round Rock and Hippelates were quite annoying; a dozen or more were about the face most of the time. At 4 p.m. Landa Park at New Braunfels was visited for about an hour. Hippelates were generally observed and many of the thousands of people were constantly brushing the face with the

hands to keep them from the eyes. There were usually from one to eight or ten about the face. (This species is probably flavipes.)

HOUSEHOLD AND STORED -

PRODUCTS INSECTS

TERMITES (Reticulitermes sp.)

Ohio

T. H. Parks (June 22): Termites seem to be getting more of a nuisance each year as we get more complaints of their work in buildings. I visited a place today where they had built passage ways up the cement wall of a basement to reach the woodwork.

Indiana

H. F. Dietz (May 31): Since the middle of March a number of reports on termites infesting buildings in Indianapolis have been received. In three cases where severe damage was done the species proved to be R. virginicus Banks. In three other cases which were examined the species was R. flavipes Koll.

Nebraska

M. H. Swenk (May 15-June 15): Additional reports of damage by our common termite R. tibialis Banks were received during the period covered by this report. One report received May 16 related to injury to the roots of corn shoots in the field in Nuckolls County, and another June 4 related to the destruction of ash trees in Lancaster County.

Kansas

J. W. McColloch (June 20): During the past month damage to dwellings has been reported from Fort Scott, Savonburg, Kansas City, Solomon, McSouth, Gypsum, Atchison, Vermillion, Pittsburg, and Bendena. A store building at Kinsley has been damaged. Injury to ornamentals was reported from Warmego.

ANTS (Formicidae)

Mississippi

R. W. Harned (June 25): Workers of Pheidole dentata were found infesting a house at West Point by Dr. M. R. Smith. He reports that the ants were observed crawling on the kitchen table where they sought out foods of a greasy nature. Although the ants commonly nest in the brick foundations of houses or sometimes in rotten sills, this is the first time the species has come to his attention as a house pest. Dr. Smith reports that the small sugar ant, Frenolepis sp., has been observed to infest a bakery and several houses in this city. These ants have also been reported from a number of other towns. They are especially fond of sugar, syrup, jellies, the icing of cakes, etc.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

R. W. Harned (June 25): On June 9 Dr. Smith observed numerous winged males of the Argentine ant in a nest at Columbus. They were the first winged specimens of this species he had observed

this year. The Argentine ant has recently been found at Star for the first time.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

R. W. Harned (June 25): On June 9 Dr. Smith found many winged males and winged females of the fire ant in several nests in Columbus. He also noticed pupae of the sexed forms. These are the first sexed forms seen this year.

CARPENTER ANT (Camponotus herculeanus L.)

Indiana

H. F. Dietz (May 31): The carpenter ant has been reported several times as quite abundant in residences in Indianapolis.

CARPENTER BEE (Xylocopa virginica Drury)

Kansas

J. W. McColloch (June 15): Injury to farm buildings by this insect was reported from Madison May 25 and Fort Scott June 1.

POWDER POST BEETLES (Lyctus spp.)

Indiana

J. J. Davis (June 26): Powder post beetles were destructive at Edinburg June 16.

Kansas

J. W. McColloch (May 29): The powder post beetles ruined an oak flooring in a house at Red Wing.

California

R. E. Campbell (June 1): Two complaints have recently been received of powder post beetles damaging oak flooring in houses in the vicinity of Alhambra. The houses were 2 and 4 years old. Single boards, here and there, in several rooms, contained numerous exit holes and indications that the insects were still working. A few adults could be collected each day.

S A SPRINGTAIL (Isotoma quadrioculata Tullb.)

Nebraska

M. H. Swenk (May 15-June 15): A housekeeper in Otoe County reported such an abundance of springtails, Isotoma quadrioculata, in her new refrigerator that milk, cream, and cheese in it became badly infested. They proved difficult to eradicate.

FALSE SCORPIONS (Pseudoscorpiones)

Nebraska

M. H. Swenk (May 15-June 15): False scorpions were found in large numbers along the walls and ceiling of the rooms in a house in Colfax County during the latter part of May.

INDIAN-MEAL MOTH (Plodia interpunctella Hbn.)

ndiana

J.J.Davis (June 26): The indian-meal moth was reported as damaging shelled corn at Albion May 26.

BEAN WEEVIL (Mylabris obtectus Say)

ndiana

J. J. Davis (June 26): The bean weevil was reported as damaging bean seed at Marion June 22.

EUROPEAN GRAIN MOTH (Tinea granella L.)

ichigan

R. H. Pettit (June 14): We received today a large sending of the European grain moth from a corncrib in the vicinity of East Lansing. As this is not a very common in the State, I am sending you a record of its occurrence.



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CLEMSON COLLEGE

THE INSECT PEST SURVEY BULLETIN

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INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JULY, 1928

The grasshopper outbreak anticipated in the last number of the Survey bulletin has developed to quite serious proportions in western South Dakota, Nebraska, and Kansas.

Throughout the greater part of the country cutworms continued to be of but little importance during July. During the latter part of June and the early part of July, however, an unusual amount of damage was occasioned by them in Maine and quite a severe outbreak developed on the overflowed land in the northern Willamette Valley in Oregon.

The fall armyworm became extremely abundant in parts of Texas during the first week in the month and about the middle of the month it was reported as doing serious damage in many localities in Mississippi.

The rose chafer appears to be unusually troublesome this season in several more or less isolated localities in the Northern and Central States, reports of serious damage having been received from New York, Indiana, Wisconsin, and Nebraska.

The abnormally large number of wireworm reports recorded in the last number of the Survey bulletin is augmented this month by reports of heavy damage from Maine, New York, Kansas, and Nebraska.

Since the low ebb in abundance of chinch bugs, which occurred between 1917 and 1919, this insect has not reached so low a population record as is reported this year.

The wheat stem maggot is appearing in epidemic form in South Dakota, Nebraska, and Kansas. The wheat joint worm and the wheat sheath worms are both very materially increasing in numbers in Ohio.

The sugarcane borer appears to be abnormally scarce this year in the cane section of Louisiana.

The codling moth adults of the first brood are emerging considerably later than last year in the Ohio River Valley and East Central

States. Illinois reports this insect two weeks later than last year and the Ohio records are approximately three weeks later.

The Oriental peach moth continues to be at a low ebb throughout the greater part of its range. It is now recorded as far east as Fredonia in New York and has been definitely located at Lake City in Spock.

Although the plum curculio still continues to be subnormally abundant throughout the greater part of the Eastern States, present conditions in Georgia indicate that there will be a heavier population after the peach season this year than has occurred for several years owing to poor weather conditions interfering with effective spraying, and reports from Illinois indicate that this insect is above normal in the southern part of the State.

Throughout the raspberry-growing section extending from Ohio and New York into Ontario the raspberry sawfly is doing very considerable damage.

A rather serious grape root worm outbreak developed in New York State and extended into Berrien County, Michigan.

The strawberry root aphid has increased so rapidly in the strawberry-growing section near Chadbourn, N. C., that it is a serious economic factor in that region.

Although the early indications were that the Mexican bean beetle would be subnormally abundant in the originally infested areas, because of low winter survival, subsequent conditions have caused this insect to increase enough to offset the winter loss. During the month the insect spread rapidly across eastern Maryland.

The elm leaf beetle appeared in serious numbers at Troy and in the suburbs of Dayton. This pest appears to be confined to the Miami Valley in the southeastern part of Ohio. No reports have been received from other States this year.

The usual number of reports on termite damage were received this month.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JULY, 1928.

Reports indicate that the onion maggot is more troublesome than usual in Ontario, sections of New Brunswick, and in southern Saskatchewan and Manitoba.

The outbreak of the roadside grasshopper, Camnula pellucida Scud., is affecting range grasses and grain crops at Riske Creek, Gang Range, Alkali Lake, Dog Creek, and Big Bar Range, and Stump Lake in the Nicola

Valley, British Columbia. Over most of the province, outside of the above areas, there has been much rain and no grasshoppers are in evidence.

Wireworms are more abundant than usual in Ontario on a variety of field crops.

Reports indicate that the rose chafer is less abundant than in former years in southern Ontario.

The potato flea beetle is prevalent throughout the St. John River Valley region, New Brunswick, but scarce along the Northern Strait and Miramichi Valley region.

Garden slugs of the species Agriolimax agrestis are present in serious numbers in field and garden crops in the Agassiz and Chilliwack Valleys, British Columbia.

The raspberry sawfly has rarely, if ever, been more injurious in raspberry plantations in the Niagara district, Ontario.

The cigar case bearer has increased in abundance in Ontario over last year and occurs almost all over the province in neglected orchards, in some of which almost every leaf is attacked. It is reported as very prevalent in orchards in the Annapolis Valley, Nova Scotia.

The species Laspeyresia packardi Zell. has become a serious pest in sour cherries, in recent years, in the Saanich district, Vancouver Island, British Columbia.

No heavy infestation of the green apple aphid has been seen anywhere in Ontario this season. Last year one of the worst outbreaks on record occurred.

The fruit tree leaf roller is much more abundant in Ontario this year than usual and is found in almost every county where fruit is grown to any appreciable extent. The eye-spotted budmoth is also more abundant than usual throughout the fruit districts of the province.

The satin moth occurs over the entire Lower Fraser Valley and over the east coast of Vancouver Island, British Columbia. The infestation is very serious this year, especially on native cottonwood. It is attacking all species of poplars and is also very noticeable on native willows.

The lilac leaf miner Gracilaria syringella Fab., now appears to be established throughout Ontario.

The spruce budworm has heavily infested Douglas fir in certain sections of Vancouver Island, British Columbia.

Cankerworms have been present in abundance in the Annapolis Valley, Nova Scotia, and have completely stripped many unsprayed orchards.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Ohio T. H. Parks (July 23): Grasshoppers are not an economic pest in Ohio this year; very few are noticed in meadows and pastures.
- South Dakota H. C. Severin (July 12): A grasshopper outbreak has started in Brule, Buffalo, and Lyman Counties, judging from the number of reports received.
- Nebraska M. H. Swenk (June 15-July 15): Grasshoppers (Melanoplus spp.) continued to be reported from the area in western Nebraska mentioned in my last report during the period here covered.
- Kansas J. W. McColloch (July 20): Grasshoppers continue to be a problem in several of the northwestern counties of the State.

SHORT-TAILED CRICKET (Anurogryllus muticus DeG.)

- Mississippi R. W. Harned (July 27): Specimens tentatively identified by J. M. Langston as Anurogryllus muticus were received July 9 from Rankin County. The correspondent reported that these insects were causing serious injury to cowpeas and other crops.

CUTWORMS (Noctuidae)

- Maine J. H. Hawkins (July 13): Cutworms had done serious injury to peas and tomatoes at Lamoine Beach when observed June 20. The red-backed cutworm, Euxoa ochrogaster Gn. was the main offender. Cabbage was also destroyed by this insect at Newport during the week of June 25. Corn had been cut off at Monmouth by this insect and by the greasy cutworm, Agrotis ypsilon Rott., on July 1. At Cape Elizabeth on July 6, both the red-backed cutworm and the greasy cutworm were present eating the leaves from cabbage and cutting them off at their bases or eating out the small heads.
- New York F. B. Morris (July 18): Sporadic damage on lettuce in Oswego County.
- J. G. Gaines (July 18): Cutworms causing slight to moderate injury on many crops in Wayne County.
- Indiana J. J. Davis (July 27): What we determined as Septis (Hadena) arctica Bdv., caused considerable damage to corn at Winamac July 1.
- South Dakota H. C. Severin (July 12): Cutworms were not so abundant as usual this year.

Oregon

L. P. Rockwood (July 7): On land overflowed until about May 20, moths of Agrotis ypsilon Rott. oviposited in mud immediately after the water drained off. First damage noted on June 23. Locality called Uapoto Lake, Washington County. Estimated damage to date being 6 acres of oats and 30 per cent of the buckwheat.

ARMYWORM (Cirphis unipuncta Haw.)

Michigan

R. H. Pettit (July 24): Armyworms were found in Gladwin and Osceola Counties. Only a few specimens have been sent in and no reports as to the injury.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Mississippi

R. W. Harned (July 27): During the past week reports have been received from several counties stating that the southern grassworm Laphygma frugiperda, was destroying young corn in many fields. It was first reported from Calhoun County on July 16, the next day from Choctaw, and the next from Yalobusha. Grassworms have been reported from Hinds, Alcorn, Lee, ~~Ortlibbeha~~ DeSoto, Chickasaw, Prentiss, and Monroe Counties. The worms are probably present in several other counties, and there is a possibility that the next generation may cause considerable damage as very few of the worms have been parasitized.

Texas

F. L. Thomas (July 9): The worms are abundant throughout a 20 acre field at College Station.

WHITE GRUBS (Phyllophaga spp.)

Indiana

J. J. Davis (July 27): White grubs were reported abundant at Crown Point June 29 and damaging strawberry at Summitville July 11.

Illinois

C. C. Compton (July 5): White grubs of brood A have been more persistent than usual in their attack on corn in Grundy County. Grubs are still working in corn that had been replanted June 10. Favorable weather for corn planting the early part of May encouraged farmers to plant corn in a season when planting should have been delayed.

Nebraska

M. H. Swenk (June 15-July 15): In Knox, Antelope, Holt, and Rock Counties hundreds of acres of hay meadows, lying in the richer and lower parts of the fields that ordinarily are the best grass-producing areas, were destroyed by white grubs during the period covered by this report. The situation is so serious in this region that there is danger of a hay shortage and the resulting forced sale of livestock in certain localities.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

New York

C. R. Crosby and assistants (July): Very serious injury to fruit and truck as well as ornamentals in parts of Wayne County has been reported this year, also slight damage in Orange and Greene Counties. (abstract J.A.H.)

Indiana

J. J. Davis (July 27): The rose chafer was reported from various sections of the State between June 28 and July 5 as follows: From Winamac comes the report that they were abundant throughout Pulaski County; defoliating young apple and plum tree at Monterey; present by the millions and devouring every green apple in a 10-acre orchard at Ray; and abundant at Crown Point.

Wisconsin

E. L. Chambers (July 25): Specimens of the rose chafer have been received from a dozen or more sources in southern counties where they have been reported as doing considerable feeding on the foliage of raspberries and to some extent injuring corn. Monroe County seems to have had more trouble than usual this year from this insect.

Nebraska

M. H. Swenk (June 15-July 15): The rose chafer appeared in great numbers in the sand-hill region of Nebraska from Cherry County and Thomas County to Grant County during the period June 19 to 26 and did the usual amount of injury to fruit and other trees, bushes, shrubs, and garden stuff.

WIREWORMS (Elateridae)

Maine

J. H. Hawkins (July 13): We have found that clover baits were effective in attracting the adults of the wheat wireworm Agriotes mancus Say and give some promise as an auxiliary method of controlling these pests. Wheat wireworms were found April 18 at Holden in the first 6 inches of soil, although the ground was still frozen beneath the top layer of 6 or 8 inches. Reports of wireworm injury to potato seed pieces during June were received from Warren, Wiscasset, and Newport. Potatoes were so badly injured on a farm at Cape Elizabeth that replanting was necessary.

New York

F. B. Morris (July 18): Wireworms caused much damage in some cornfields; in one case 60 per cent being destroyed in Oswego County.

J. G. Gaines (July 19): Only a trace of injury on many crops in Wayne County.

Nebraska

M. H. Swenk (June 15-July 15): Corn wireworms (Melanotus cribulosus Lec. and others were unusually injurious to corn during the first half of July. In some fields the loss of stand

was quite serious. The trouble was most prevalent in the area from Clay and Hamilton Counties north to Merrick and Valley Counties.

ansas J. W. McColloch (June 26): Corn is being injured by wireworms on a farm at Oswego. Damage has occurred for several years.

JAPANESE BEETLE (Popillia japonica Newm.)

ew Jersey and
ennsylvania

Monthly Letter of the Bureau of Entomology No.170, June, 1928: At the present time five species of Oriental parasites of the Japanese beetle are established in New Jersey, there being two species of Tiphia and one each of Centater, Dexia, and Prosenia, Tiphia vernalis was recently recovered for the first time from a colony that was established two years ago. The same species has been recovered from three colonies established last year. Dexia ventralis has been recovered in both this year and last year, from the first colony established. Twenty-three thousand Tiphia cocoons have been received this year from India, and a shipment of 3,000 adult Tiphia vernalis from Japan arrived in good condition, with 42 per cent alive. Five thousand Prosenia sibirita were received from Japan on parastized grubs. The larval surveys conducted during the late spring and early summer of the present year at numerous stations within the heavily infested area indicate a marked reduction of Japanese beetle population at all stations where the beetle has been long established, and a decided increase in the newer stations.

C E R E A L A N D F O R A G E - C R O P I N S E C T S

WHEAT AND OATS

HESSIAN FLY (Phytophaga destructor Say)

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T. H. Parks (July 21): The survey just completed in Ohio this year shows Hessian fly less abundant over the State as a whole than a year ago. It has increased rapidly in the southwestern quarter of the State, remains nearly the same as last year in the northeast, but has decreased very much in the northwestern quarter. The average for the State this year is 13 per cent of the straws infested, compared with 20.6 per cent a year ago. The infestations by counties range from 1 per cent in Ottawa and Sandusky Counties to 32 per cent in Stark County located in eastern Ohio where considerable wheat was sowed early last fall.

The rapid increase has come about in southwestern counties even though practically no wheat was sowed early. Economic damage from the insect was confined to a few northeastern counties. An unusual thing about this survey is that the infestation in individual fields within the same county varied from

none to 60 per cent.

The record by counties was as follows:

<u>N. W.</u> <u>Counties</u>	<u>Per cent</u>
Fulton	28
Henry	10
Wood	3
Allen	10

<u>N. W.</u> <u>Counties</u>	<u>Per cent</u>
Hancock	7
Sandusky	1
Ottawa	1
Mercer	15

<u>N. E.</u> <u>Counties</u>	<u>Per cent</u>
Portage	12
Medina	22
Ashland	22

<u>N. E.</u> <u>Counties</u>	<u>Per cent</u>
Wayne	18
Stark	32
Holmes	23

<u>S. W.</u> <u>Counties</u>	<u>Per cent</u>
Butler	16
Highland	17
Clinton	15
Clermont	9
Ross	2

<u>S. W.</u> <u>Counties</u>	<u>Per cent</u>
Pickaway	9
Franklin	9
Clarke	10
Miami	16
Darke	22

Nebraska

M. H. Swenk (June 15-July 15): Present indications are that there is a general but light infestation of the wheat stubble with the Hessian fly over southeastern Nebraska, and because of the abundance of rainfall that we are having and the heavy volunteer wheat growth that is developing, the situation is being most carefully followed.

CHINCH BUG (Blissus leucopterus Say)

Nebraska

M. H. Swenk (June 15-July 15): The chinch bug did no commercial damage to crops in Nebraska this year. Not since the very low obbin abundance of the chinch bug during the years 1917 to 1919 has there been so little evidence of this pest as during the present summer.

ENGLISH GRAIN APHID (Macrosiphum granarium Kby.)

Nebraska

M. H. Swenk (June 15-July 15)1 In Nance County, during the third week in June, oat fields were found heavily infested with the English grain aphid which was found working over in- to adjacent corn fields also, in some places.

WHEAT-STEM MAGGOT (Meromyza americana Fitch)

Nebraska

M. H. Swenk (June 15-July 15): Reports of the wheat-stem maggot causing injury to wheat heads continued to be received

up to June 28 from localities ranging north to Pierce County and west to Scotts Bluff County.

th Dakota

H. C. Severin (July 12): The wheat-stem maggot was more abundant than usual this year in our wheat.

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J. W. McColloch (June 23): Wheat received from Greensburg was heavily infested with this species. The farmer reports 15 to 33 per cent of his crop infested.

WHEAT-HEAD ARMYWORM (Neleucania albilinea Hbn.)

inois

W. P. Flint (July 21): This insect has been reported in several of the northwest-central counties of Illinois. In every case it was sent in or reported from timothy. This insect is rarely reported from any other section of Illinois.

WHEAT JOINT WORM (Harmolita tritici Fitch)

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T. H. Parks (July 23): Wheat joint worm has increased greatly in the southern half of the State over that found last summer. No damage was done this year, but the insect is increasing rapidly. More numerous than in an average year.

WHEAT SHEATH WORM (Harmolita vsginicola Doane)

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T. H. Parks (July 23): This insect has increased in abundance in the central counties. Many fields have from 3 to 6 per cent of the straws infested, while one field in Crawford County has 11 per cent infested. These infested straws are quite noticeable before the wheat is harvested. I attribute this largely to the late development of the plants this spring.

CORN

STALK BORER (Papaipema nebris nitela Gn.)

York

W. H. Freeman and E. Kostal (July 14): The stalk borer is especially common and destructive in the vicinity of Tottenville, Staten Island. The following plants have been found infested: Marigold, tomato, sweet corn, and dahlia. A small stand of sweet corn about to enter the tassel stage showed about 20 per cent infestation.

G. H. Salisbury (July 23): Tomatoes have been attacked by stalk borers in Chautauqua County.

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J. J. Davis (July 27): The stalk borer has been common throughout the State, but not so destructive, apparently, as in 1926 or 1927. It was repeatedly sent in as possibly the European corn borer. Injury was reported to wheat from Ambia and Lafayette,

June 27; to barley at Albion, July 10; to oats near Indianapolis, July 7; to corn at Frankfort, Logansport, Hartford City, Lowell, Atlanta, Attica, North Liberty, Linden, Thorntown, New Richmond, DePauw, Greenfield, Rockville, Waynetown, and Stendal between July 3 and 25; to potato at Camden and Gasten, July 13; to tomatoes at Greensburg and Camden, July 6 and 13, respectively; to dahlias and zinnias at Greensburg, July 6; to mint, which was appreciably damaged, at Kimmel, July 10; in ragweed at Greenfield, July 25; to hollyhocks and dahlias at Waynetown, July 27.

Illinois

W. P. Flint (July 21): As has been the case for the past several seasons, large numbers of the common stalk borer are being received daily. In most cases these insects are sent in with the thought that they may be the European corn borer.

Wisconsin

E. L. Chambers (July 25): Many specimens of the stalk borer have been received during the past week. It was reported by several correspondents as being unusually injurious to hollyhocks and one report stated that it was playing havoc with beans.

Kansas

J. W. McColloch (July 20): The common stalk borer is again causing considerable damage to corn in Kansas. Rainy weather and heavy weed growth last year are partly responsible. About the same in abundance as compared with an average year.

South Dakota

H. C. Severin (July 12): Sent in with the fear it might be the European corn borer. Damage being very small in the eastern half of the State.

Nebraska

M. H. Swenk (June 15-July 15): The stalk borer was frequently sent in for identification, or its injuries were complained of during the last half of June and the first half of July. These reports have come in from all parts of the eastern one-third of the State.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

New York

M. N. Taylor (July 23): At present there is no injury from the European corn borer in Erie County.

SMARTWEED BORER (Pyrausta ainsliei Heinr.)

Wisconsin

E. L. Chambers (July 25): Several abandoned fields having large patches of smartweeds were found heavily infested with this borer at Dane.

Nebraska

M. H. Swenk (June 15-July 15): During the past few years we have received literally hundreds of caterpillars of various species with the inquiry, "Is this the European corn borer?"

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway and W. E. Haley (June 29): From our own observations and from reports from reliable observers the sugarcane moth borer is extraordinarily scarce this year. Fields of corn and sugarcane have been examined and no borers found. An infestation of 20 per cent of the stalks in a cornfield is the greatest infestation of which we have heard. The egg parasite Trichogramma minutum Riley has not been found so far under natural conditions.

J. W. Ingram (July 21): Borer damage to early varieties of rice in southwestern Louisiana has been small this season. These varieties are now headed and very few dead heads resulting from borer damage have been found at Crowley.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

R. W. Harned (July 27): A correspondent at Wiggins in Stone County reported on July 15 that the lesser corn stalk borer had completely destroyed a 10-acre field of young corn. A correspondent at Hattiesburg, Forrest County, reported on July 23 that injury by this insect was noticeable in many cornfields in that vicinity. Rather serious injury to beans by it was reported from Kreole, Jackson County, July 13.

LARGER CORN STALK BORER (Diatraea zeacolella Dyar)

South Carolina

M. H. Brunson (July 10): The larger corn stalk borer has been reported damaging corn. The larvae of a corn billbug belonging to the genus Sphenophorus was found in most cases associated with it.

LINED CORN BORER (Hadena fractilinea Grôte)

Wisconsin

E. L. Chambers (July 25): Several reports have been received from the southeastern part of the State to the effect that the lined stalk borer was appearing in patches of corn and doing serious injury for a while but have now pupated. A large number of specimens were sent in by the county agent of Monroe County for identification.

South Dakota

H. S. Severin (July 12): This insect was sent in many times from the eastern half of the State.

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

Kansas

J. W. McColloch (July 12): Corn injured by this species was received from LaCygne.

CORN LEAF APHID (Aphis maidi Fitch)

Mississippi R. W. Harned (July 27): Corn plants rather badly infested with Aphis maidi were received from Mount Olive, Covington County, June 28.

CORN BILLBUGS (Sphenophorus spp.)

South Carolina M. H. Brunson (July 10): A number of species of corn billbugs belonging to the genus Sphenophorus have been more numerous and have done more damage to corn than usual in the east-central part of the State.

Indiana J. J. Davis (July 27): Corn billbug injured plants were received from Logansport, July 3. However, this was old injury the plants being badly riddled and with distorted tillering.

Kansas J. W. McColloch (July 15): A bad infestation of Sphenophorus maidis was found in a field of corn on the Kansas river near Manhattan.

CORN SILK BEETLE (Luperodes varicornis Lec.)

Mississippi R. W. Harned (July 27): Beetles belonging to the genus Luperodes probably varicornis have attracted considerable attention in corn and cotton fields in a few counties during the past few weeks. Serious injury to corn and cotton by these beetles was reported from Marshall County on July 7 and from Tishomingo County a few days later.

THRIPS (Thysanoptera)

Maine J. H. Hawkins (July 13): Thrips, which were present in corn in the St. Albans neighborhood last year, are again present and are a serious pest in sweet corn planted for canning.

SOY BEANS

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

North Carolina C. H. Brannon (June 29): Reported By Hugh Overstreet, county agent, as ruining fields of soy beans in Carteret County.

A BLISTER BEETLE (Epicauta lemniscata Fab.)

Louisiana J. W. Ingram (July 7): Blister beetles appeared in a number of soy bean fields around Crowley during the first week of July.

BANDED FLEA BEETLE (Systema taeniata Say)

J. J. Davis (July 27): Systema taeniata destroyed 3 acres of soy beans at Clinton July 7.

F R U I T I N S E C T S

EUROPEAN RED SPIDER (Paratetranychus pilosus C. & F.)

C. R. Crosby and assistants (July): This insect is decidedly subnormal throughout the western fruit-growing counties. (abstract J. A. H.)

FALSE TARNISHED PLANT BUG (Lygus invitus Say)

C. K. Bullock (July 14): In Ontario County this insect was very serious in parts of a few orchards.

E. E. Frane (July 10): Slight injury in some pear orchards in Wayne County.

F. B. Morris (July 18): Present in some orchards in Oswego County.

APPLEAPPLE APHID (Aphis pomi DeG.)

C. R. Crosby and assistants (July): Early in the month this insect became decidedly numerous in the southeastern part of the State, and by the middle of the month serious curling was observed in Clinton, Ulster, Greene, and Columbia Counties. Throughout the rest of the State this insect remains very scarce. (abstract J. A. H.)

ROSY APPLE APHID (Anuraphis roseus Baker)

C. R. Crosby and assistants (July): In the southeastern part of the State the rosy apple aphid put in its appearance about the middle of the month and did some damage in a few orchards, as indicated by reports from Orange and Ulster Counties. In the western part of the State it was a negligible factor. (Abstract J.A.H.)

S. C. Chandler (July 21): Severe and late injury has occurred in southern Illinois from rosy apple aphid.

CODLING MOTH (Carpocapsa pomonella L.)

C. R. Crosby and assistants (July): In the eastern part of the State eggs began hatching early in the month, and by the middle

of the month considerable damage was reported from Greene County, though in general but little sideworm was observed throughout the month. In Clinton County considerable sideworm injury was observed on the 16th, and in the western part of the State sideworm injury became quite conspicuous late in the month. (abstract J.A.H.).

Georgia

E. Lee Worsham (July 23): The codling moth is not so abundant as last year. The egg parasite Trichogramma minutum Riley has been introduced in the apple growing region of northern Georgia and about 95 per cent have emerged. The introduction is very successful so far as can be told at this time.

Ohio

T. H. Parks (July 23): Emergence of the spring brood of moths occurred at Columbus rather regularly between May 18 and July 9. Worms began leaving the fruit the week of July 10, with the first pupa observed July 15. Spraying is advised for central Ohio during the last week of July. The brood is much lighter than usual in the southern half of the State, with a very few worms being taken under the bands by L. A. Stearns in Lawrence County.

Illinois

S. C. Chandler (July 21): Codling-moth adults of the first brood are now emerging in central and southern Illinois. Emergence started in southern Illinois on July 9 and in central Illinois July 14. This is nearly two weeks later than normal. While the first brood worms were not so abundant as usual, unsprayed orchards show an average infestation of from 15 to 20 per cent, and with favorable weather it is possible that this infestation will reach close to 100 per cent before the end of the season. The last moths from overwintering larvae emerged June 26 at Carbondale.

Nebraska

M. H. Swenk (June 15-July 15): The first brood of the codling moth began its emergence at Lincoln on July 13, about a week after the disappearance of the last moths of the spring brood in our rearing cages.

Washington

E. J. Newcomer (July 4): First-brood moths began appearing at Yakima July 4. The first spray for the second brood of worms should thus be completed by July 12. On account of the protracted warm spell in May it was suggested in the June Bulletin that a higher percentage of wormy apples might result than usual; present indications are that this will not be the case, the warm weather having been followed by a long period of abnormal cool, windy weather, which apparently offset the effect of the warm weather.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

New York

C. R. Crosby and assistants (July): This insect is unusually prevalent throughout the State, even doing extensive damage in well-sprayed orchards. It is particularly serious on pears. (abstract J.A.H.)

CASE BEARERS (Coleophora spp.)

New York

C. R. Crosby and assistants (July): Case bearers were generally of little importance except in orchards where arsenicals were omitted from the first spray. C. fletcherella Fern. was more prevalent than C. malivorella Riley. (abstract J.A.H.)

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

New York

C. R. Crosby and assistants (July): The apple and thorn skeletonizer is present in normal numbers in Wayne, Onondaga, Dutchess and Orange Counties. In Ontario and Genesee Counties they did considerable damage during the month. (abstract J.A.H.)

EYE-SPOTTED BUD MOTH (Spilonota ocellana Schiff.)

New York

C. R. Crosby and assistants (July): The eye-spotted bud moth has been decidedly more serious this year than in many years, reports having been received from practically all the central and western counties of serious damage, in some cases even where good spray practices have been followed. (abstract J.A.H.)

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

New York

C. R. Crosby and assistants (July): The eastern tent caterpillar was very abundant in practically all unsprayed orchards in the western part of the State. The first eggs of the second generation were observed in Dutchess County on July 12. (abstract J.A.H.)

Ohio

E. W. Mendenhall (July 21): Tent caterpillars are quite numerous on apple and other trees in southwestern Ohio.

FALL WEBWORM (Hyphantria cunea Drury)

New York

E. E. Frane (July 16): Fall webworms were seen in two orchards in Wayne County.

C. K. Bullock (July 23): Fall webworms are hatching and spinning their webs in Ontario County.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York

C. R. Crosby and assistants (July): Adults of the apple maggot began emergence in the southeastern part of the State during the last week in June and the first week in July. Emergence apparently reached its peak in this part of the State by the middle of the month, though it was generally heavy throughout the third week of July. (abstract J.A.H.)

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

New York

W. E. Field (July 18): Trees injured in two uncultivated orchards in Onondaga County.

A. B. Burrell (July 23): Adults of the Buffalo treehopper were first observed July 20 in Clinton County. This insect does economic injury in this territory to young apple trees in sod, and especially to those in alfalfa sod. Attempts made two years ago to prevent oviposition of this pest by painting the trunk and branches of young trees were unsuccessful.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio

T. H. Parks (July 23): For the first time the apple flea weevil has damaged foliage on trees in many commercial orchards in southern Ohio. The apple orchards at Chillicothe have a heavy infestation with severe damage. Previous damage in Ohio had been confined to Delaware County where the insect has been present for a number of years. Presence of the insect in the hill orchards of the county prevents cultivation, which is the only control method known.

CRANBERRY ROOT WORM (Rhabdopterus picipes Oliv.)

New York

E. E. Franc (July 10): Slight injury in several apple orchards but much less than a few years ago in Wayne County. (July 16): The cranberry root worm beetle caused less damage on apples than usual this year in Wayne County. Its work was found on the foliage of several weeds, as well as apple and cherry foliage. Only a few apples were found which had been attacked.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

New York

W. E. Field (July 18): Not causing much trouble in Onondaga County.

Ohio

E. W. Mendenhall (July 18): The round-headed apple tree borer is quite bad in some of the commercial orchards in

Montgomery County.

APPLE REDBUG (Lygidea mendax Reut.)

New York

E. E. Frane (July 10): Abundant in the southern part of Wayne County in some orchards, and present in a few orchards in the northern half of the county.

W. E. Field (July 16): Severe injury from redbug was noted in one orchard in Onondaga County where nicotine was omitted from the calyx spray. (July 18): Generally abundant in Onondaga County and serious in one orchard.

APPLE LEAFHOPPER (Empoasca mali LeB.)

New York

C. R. Crosby and assistants (July): Throughout the greater part of the New York fruit-growing section leafhoppers were unusually abundant, as high as 87 per cent of the leaves showing injury during the first week in the month and depredations continued throughout the month. (abstract J.A.H.)

GREEN APPLE LEAFHOPPER (Empoa unicolor Fitch)

New York

A. S. Mills (July 2): The green apple leafhopper E. unicolor has reached the 4th and 5th stages and is abundant in a few orchards in Greene County. (July 16): A few adults of E. unicolor are now present in the orchards. E. unicolor are much less abundant than Typhlocyba pomaria this year in Greene County.

SCURFY SCALE (Chionaspis furfura Fitch)

New York

E. E. Frane (July 10): Present in two apple orchards in Wayne County.

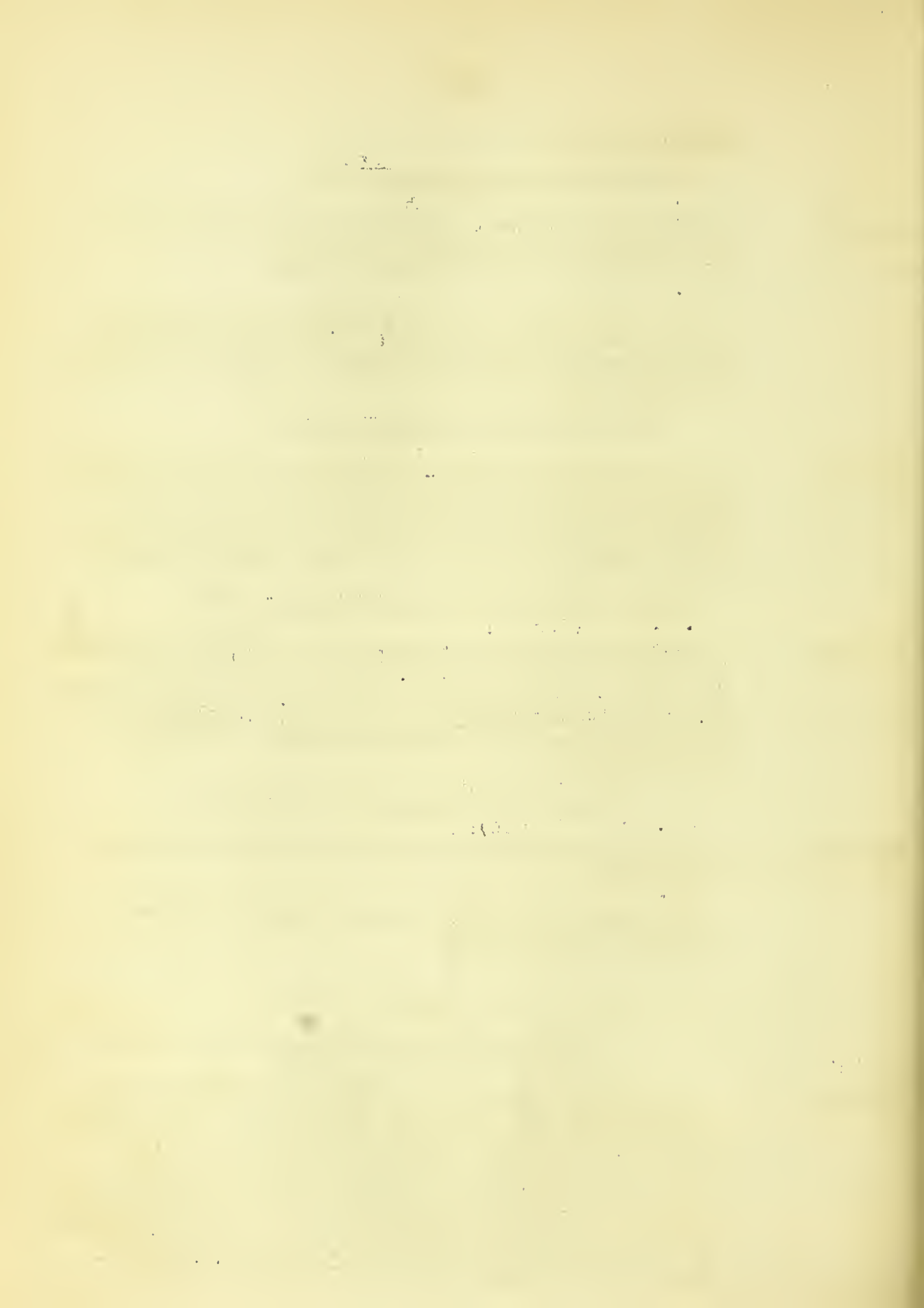
F. B. Morris (July 18): A few were found in some pear orchards in Oswego County.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York

C. R. Crosby and assistants (July): Early in the month egg-laying was well under way, reports having been received from Ulster and Ontario Counties on July 2. In the western part of the State the insect was generally very scarce and indications were that no further spraying would be necessary for this insect. In the eastern part of the State in Orange and Dutchess Counties there was a decided increase by the middle of the month and the insect was very abundant during the third week in July. (abstract J.A.H.)



PEACH

LESSER PEACH TREE BORER (Sesia pictipes G. & R.)

New York

E. E. Frane (July 10): Troublesome around brown rot cankers in old orchards in Wayne County.

C. K. Bullock (July 14): Present in some orchards where there are brown rot cankers in Ontario County.

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

New York

E. J. Hambleton (July 2): Some twig and fruit injury by the oriental peach moth larvae has been noticeable for some time in Ulster County. One 2-year old orchard north of Kingston contained several infested fruits.

D. M. Daniel (July 16): The oriental peach moth infestations have been located as far east as Fredonia. Several orchards between Fredonia and Westfield show twig injury, and larvae were collected. Farthest point east last year was Westfield. To State Line the infestation is general but light.

South Carolina

Oliver I. Snapp (July 23): A definite record of the occurrence of this insect in South Carolina was established as a result of the determination of larvae in peach twigs sent to Prof. Franklin Sherman of Clemson College by Mrs. B. R. Furtick, of Lake City, S. C.

Georgia

Oliver I. Snapp and H. S. Swingle (July 20): The oriental peach moth infestation in middle Georgia is not more than ten per cent of what it was in 1927. It has suffered a great set-back this year. Some of the properties infested last year show no infestation this year, while others show only a light infestation where it was heavy a year ago.

E. Lee Worsham (July 23): The oriental peach moth has not been present nearly as much in northern Georgia as last year.

Ohio

E. W. Mendenhall (July 7): I find the oriental peach moth infesting peach and plum trees to some extent in Franklin County. The oriental peach moth was found in Montgomery County peach orchards but does not appear to be as bad as last year. At Columbus this moth caused some damage to peach. Found in Miami County to some extent. It shows up a little later this year. The damage does not seem to be very extensive.

Indiana

J. J. Davis (July 27): The oriental peach worm occurs in considerable abundance at New Albany. The writer visited four peach orchards in the vicinity of New Albany July 18 and found the insect present in all of the orchards. In two of these orchards the infestation is heavy and we estimate 90 to 100 per cent of the fruit will be infested by harvest.

GREEN PEACH APHID (Myzus persicae Sulz.)

New York

E. E. Frane (July 10): None observed in Wayne County.

COTTONY PEACH SCALE (Pulvinaria amygdali Ckll.)

New York

E. E. Frane (July 2): In Wayne County many of the ovisacks of the cottony scale are full of eggs on peach while others are just beginning to show a fringe of cotton. (July 10): Abundant in a few orchards but now under control in Wayne County.

A LACE WING: (Corythuca sp.).

New York

E. E. Frane (July 2): Large numbers of hatched and unhatched lace wing eggs were seen in a peach orchard near the Lake in Wayne County.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New York

C. R. Crosby and assistants (July): This insect is generally scarce throughout the State. (abstract J.A.H.)

Georgia

Oliver I. Snapp (July 20): Some scale spots have been observed on some of the fruit at Fort Valley. One complaint of a heavy infestation damaging trees has recently come to the laboratory.

CHERRY

CHERRY FRUIT FLY (Rhagoletis cingulata Loew.)

New York

C. R. Crosby and assistants (July): Emergence of the cherry maggot was practically completed by July 2 in the rearing cages in Wayne County. The flies in general were quite prevalent throughout the State but well controlled in all commercial orchards. (Abstract J.A.H.)

DARK CHERRY FRUIT FLY (Rhagoletis fausta O.S.)

New York

E. J. Hambleton (July 2): In Ulster County, in one trap which yielded R. fausta the cingulata species began to emerge on the 15th, 10 days later than records of other traps, and have not reached a peak to date.

PEAR SLUG (Eriocampoides limacina Retz.)

Indiana

J. J. Davis (July 27): The cherry slug was abundant on cherry at Lafayette June 27 and at Winona Lake July 20.

CHERRY APHID (Myzus cerasi Fab.)

New York

C. R. Crosby and assistants (July): The cherry aphid is decidedly below normal throughout the State. (abstract J. A. H.).

PEACH BARK BEETLE (Phthorophloeus liminaris Harr.)

Pennsylvania

M. F. Curvell (July 2): Several trees in sweet cherry orchard dying apparently from attack of this insect in Erie County.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

New York

E. E. Frane (July 10): One young cherry orchard injured in Wayne County near large wood pile from which the beetles emerged.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

New York

C. R. Crosby and assistants (July): The plum curculio was about normally abundant, considerable injury being reported from poorly sprayed orchards throughout the State. (abstract J.A.H.)

Georgia

Oliver I. Snapp (July 20): This insect caused considerable damage in some orchards during recent weeks at Fort Valley and some complaints of wormy fruit have reached the laboratory. Some rain has been recorded on one-half of the days since June 1, and that has materially interfered with the effectiveness of the insecticide used for the curculio. It has also facilitated the development of first-generation adults. These adults have been emerging from the soil in numbers for several weeks, but to date there have been no indications of a second brood. Practically all of the "worms" in peaches recently have been large ones, indicating that they are the progeny of overwintered females. The curculio population in Georgia peach orchards after the peach season will evidently be larger than it has been for some years.

E. Lee Worsham (July 23): Damage to peaches in northern Georgia by the plum curculio is very light compared with damage done in 1926 and 1927.

Illinois

S. C. Chandler (July 21): Curculio infestation has been heavier than usual in parts of southern Illinois. Many growers have applied as many as seven dust applications with arsenate of lead. More curculios have been jarred at Carbondale from unsprayed trees than any previous season. The first curculios emerged in cages from drop peaches were seen at Carbondale on July 10.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Utah

George F. Knowlton (July 10): Aphids have been doing serious damage to plum trees this spring at Hyde Park, and northern Logan. Most of the leaves have become severely curled in many cases.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

New York

E. E. Frane (July 10): Not causing much trouble in Wayne County.

C. K. Bullbuck (July 14): Abundant in a few plum orchards in Ontario County.

W. E. Field (July 18): Some present in plums in Onondaga County.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Wisconsin

E. L. Chambers (July 25): The raspberry fruit worm caused serious losses in several large raspberry plantations in the southern part of the State this summer, and specimens received last week indicate that it completely destroyed the fruit in one small planting.

OBLIQUE BANDED LEAF ROLLER (Archips rosaceana Harr.)

Wisconsin

E. L. Chambers (July 25): The oblique banded leaf roller has been reported being more plentiful than usual on raspberry plantings in the southern part of the State. The nursery inspectors have sent in several lots of specimens for verification.

RASPBERRY SAWFLY (Monophadnoides rubi Harr.)

New York

G. H. Salisbury (July 2): Sawflies are working on berries quite extensively in Chautauque County.

F. B. Morris (July 18): Did considerable damage in several plantings in Oswego County.

Ohio

E. W. Mendenhall (July 11): The raspberry sawfly is very bad on raspberry leaves in plantations at Brandt, Miami County. The leaves are riddled and no doubt the damage is considerable to the new growth for tips.

Canada

G. H. Chamberlin (July 2): Raspberry sawfly injury can be noted in raspberry plantations in Ontario County.

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

New York

C. R. Crosby and assistants (July): Damage by this insect, though not extremely serious, was reported from Chautauqua, Oswego, and Onondaga Counties. (abstract J.A.H.)

RASPBERRY

RED SPIDER (Tetranychus telarius L.)

Michigan

R. H. Pettit (July 12): Berrien County is at present suffering from attacks of mites working on the foliage of raspberries. The reports would indicate that the attack is a very serious one and comes at the time of picking the fruit. It is now being investigated.

A TREE CRICKET (Oecanthus sp.)

New York

W. E. Field (July 18): The insect is causing serious injury in some Columbia plantings in Onondaga County.

BLACKBERRY

BLACKBERRY LEAF MINER (Metallus sp.)

New York

G. H. Salisbury (July 23): The blackberry leaf miner is generally distributed and is causing a few growers concern in Chautauqua County.

COWPEA CURCULIO (Chalcodermus acneus Boh.)

North Carolina

W. A. Thomas (July 3): Hundreds of specimens of this insect have been observed on the tender shoots of blackberry during the past few days at Chadbourn, but there was no evidence of feeding. They have been found only in plants adjacent to cultivated fields.

GRAPE

BLACK GRAPE APHID (Macrosiphum illinoisensis Shimer)

New York

Sidney Jones (July 9): The black grape aphid was found on grapes near Nawburg, Orange County, on July 2.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

New York

D. M. Daniel (July 16): The grape berry moth in Chautauqua County seems to be confined mostly to the first few rods adjacent to the underbrush along Lake Erie, and along fence rows and woodlots.

Mississippi

R. W. Harned (July 27): Grapes seriously injured by the grape berry moth have been received from Derma, Big Creek, Durant, and Stoneville.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

New York

D. M. Daniel (July 16): Feeding of the eight-spotted forester moth has been noted in a few vineyards in Fredonia County.

G. H. Salisbury (July 23): In Chautauqua County the eight-spotted forester larvae can be found at work; although discovered here and there these pests seem to be found mostly along the western half of the shore line. Their numbers are not alarming.

Kansas

J. W. McColloch (July 5): Larvae of this species are reported defoliating grapevines at Palco.

GRAPE LEAF SKELETONIZER (Harrisina americana Guer.)

North Carolina

C. H. Brannon (July 20): This insect is causing considerable damage to grape leaves in unsprayed vineyards over the State.

GRAPE ROOT WORM (Fidia viticida Walsh)

Michigan

R. H. Pettit (July 26): This insect for the first time is doing serious injury in Berrien County. In past years we have occasionally found scattered specimens, but only on rare occasions. This year the beetle is pretty well scattered over Berrien County and is reported by county agent Lurkins as well established and doing quite a little injury.

New York

C. R. Crosby and assistants (July): During the first week of the month these beetles were observed, and by the 16th indications of a rather serious outbreak led the growers to spray. Unsprayed vineyards were seriously damaged by beetle-feeding. It was still evident at the end of the month. (abstract J.A.H.)

GRAPE LEAFHOPPER (Erythroneura comes Say)

York C. R. Crosby and assistants (July): Throughout the lake grape-growing section the grape leafhopper is very much less prevalent than usual and this year is attracting little attention of the growers. (Abstract J.A.H.)

o T. H. Parks (June 20): These grape leafhoppers, Erythroneura comes and E. tricineta Fitch, are more abundant in commercial grape-growing counties along the lake shore than last year. A majority of the vineyards appear to be seriously infested east of Cleveland. More abundant compared with an average year.

raska M. H. Swenk (June 15-July 15): Complaints of injury to woodbine and grapevines by the grape leafhopper continued to be received during the period covered by this report.

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

York E. E. Frane (July 10): Caused slight injury to buds; some larvae have been found in Wayne County.

D. M. Daniel (July 16): Several complaints of injury by a steely beetle attacking grape have been received from Fredonia County.

RED-HEADED FLEA BEETLE (Systema pallicornis Schif.)

York D. M. Daniel (July 16): Feeding of the eight-spotted forester moth and of the red-headed systema beetle has been noted in a few vineyards in Fredonia County.

GRAPE PHYLLOXERA (Phylloxera vitifoliae Fitch)

York Sidney Jones (July 9): The grape phylloxera was found to be doing injury to a vineyard in the Newburg section of Orange County July 6.

iana J. J. Davis (July 27): The leaf gall form of the grape phylloxera was reported from Lapel June 28 and from Peru July 21. This leaf gall form is reported every year, but apparently occurs only on wild varieties and is never serious.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

York C. R. Crosby (June 18): Specimens received from Allegany County, also infested vine received from Belmont. Determination made by Dr. Morrison.

CURRANT AND GOOSEBERRY

CURRANT APHID (Myzus ribis L.)

CURRENT AND GOOSEBERRY

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants (July): The current aphid is normally abundant in the west-central counties. (abstract J.A.H.)

HOUGHTON'S GOOSEBERRY APHID (Aphis houghtonensis Troop.)

Indiana J. J. Davis (July 27): The gooseberry gall aphid, Aphis houghtonensis, damaged gooseberry at Greensburg, July 7.

GOOSEBERRY FRUIT WORM (Zophodia grossulariae Riley)

Mississippi R. W. Harned (July 27): During the latter part of June a correspondent at Corinth in Alcorn County reported that blueberries were being seriously injured by larvae that have been tentatively identified as the gooseberry fruitworm.

PECAN

PECAN LEAF CASE BEARER (Acrobasis nebulella Riley)

North Carolina C. H. Brannon (June 20): This insect is causing severe damage to pecans in the eastern part of the State.

RED SPIDER (Tetranychus telarius L.)

Mississippi R. W. Harned (July 27): Injury to pecan trees by these mites was reported from Leflore and Noxubee Counties recently. Many complaints in regard to red spider on ornamental plants have also been received.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi R. W. Harned (July 27): The walnut caterpillar seems to be present on pecan trees in all parts of the State.

PECAN BUDMOTH (Proteopteryx bolliana Slug.)

Mississippi R. W. Harned (July 27): We continue to receive many complaints in regard to injury to pecan trees by the pecan budmoth. During July specimens have been received from Humphreys, Sunflower, Leflore, Harrison, and Lee Counties.

WALNUT

WALNUT HUSK MAGGOT (Rhagoletis juglandis Cress.)

California

Monthly News Letter Los Angeles County Hort. Comm. Vol. 10, No. 7, July 15: During the past two or three seasons English walnuts from orchards near Chino on the Los Angeles -San Bernardino County line have been under suspicion of infestation with a husk maggot, a species of insect belonging to the family of fruit flies and not definitely known to occur in the State. Until recently, however, only adults of local scavenger flies had been reared from repeatedly collected infested material. Recently adult specimens of the Walnut husk maggot determined by Dr. J. M. Aldrich, U. S. National Museum, Washington, D. C., were reared by H. M. Armitage, Deputy Horticultural Commissioner, Los Angeles, from material collected in this same locality in October, 1927.

WALNUT APHID (Chromaphis juglicola Kalt.)

California

Monthly News Letter Los Angeles County Hort. Comm. Vol. 10, No. 7, July 15: A recent heavy infestation of walnut aphid throughout the walnut districts has recently caused considerable attention due to the rapid blackening of the foliage from the "sootymold" fungus growing in the honeydew copiously secreted by these insects. The infestation has apparently passed its peak. Egg clusters of the ashy-gray ladybird beetle, a most effective enemy of this pest, are everywhere over foliage and bark of infested trees, and together with a few days of hot weather should bring about early effective control.

CITRUS

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter Los Angeles County Hort. Comm. Vol. 10 No. 7, July 15: According to the report of Deputy Horticultural Commissioner, H. M. Armitage in Charge of Insectary Operations, these beetles were distributed over approximately 8,000 acres of citrus throughout the county.

BLACK SCALE (Saissetia oleae Bern.)

California

Monthly News Letter Los Angeles County Hort. Comm. Vol. 10, No. 7, July 15: The hatch of black scale is practically complete in all districts and in the coast area the young scales are reported as reaching considerable size with some scales already migrating back to the wood.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

California

Monthly News Letter Los Angeles County Hort. Comm.
Vol. 10, No. 7, July 15: All host plants of the citrus
whitefly in the Arcadia Nursery in which a recent in-
festation of this pest was recorded have been destroyed
by burning.

CITRUS RUST MITE (Eriophyes oleivorus Ashm.)

Texas

F. L. Thomas (June 25): S. W. Clark, entomologist of the
Lower Rio Grande Valley substation, reports that rust
mites are becoming quite abundant in the groves.

TRUCK - CROP INSECTS

BLISTER BEETLES (Meloidae)

Indiana J. J. Davis (July 27): The striped blister beetle, Epicauta vittata, damaged dahlia flowers at Connersville July 18.

Mississippi R. W. Harned (July 27): Blister beetles identified as Macrobasis unicolor were reported as causing severe injury to Irish potatoes at Booneville July 5.

CARROT BEETLE (Ligyrus gibbosus DeG.)

Wisconsin J. W. McColloch (June 23): This species is seriously damaging carrots, tomatoes, and parsnips at Polla.

WESTERN GARDEN FLEA BEETLE (Phyllotreta pusilla Horn)

Nebraska M. H. Swenk (June 15-July 15): The western garden flea beetle continued to be complained of on garden truck until toward the end of June.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

Ohio T. H. Parks (July 23): The zebra caterpillar has been much more abundant than usual and has been attacking onions and other garden vegetables in various parts of the State.

Indiana J. J. Davis (July 27): The zebra caterpillar was reported on onions at Judson June 27 and on peas, cabbage, and beets at Thorntown July 2.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

New York C. R. Crosby and assistants (July): Serious injury to beans and sweet corn by this insect has been reported from Wayne, Onondaga, and Ontario Counties. (abstract J.A.H.)

Wisconsin J. E. Dudley, Jr. (July 21): Unusually severe infestation by what was believed to be the seed corn maggot was found in rows of cull onions the middle of June in Kenosha County. No infestation of any extent could be found in seeded onions. This is the first time in 5 years that this species, if correct, has been known to attack onions to amount to anything. There were 7 inches of rain reported during June at Racine, 4 miles from the laboratory. This exceeds all records for June. The rainfall coming in especially hard downpours destroyed from 75 to 90 per cent of either eggs or young larvae, or both, of the onion maggot. These weather conditions also resulted in an uneven and late emergence of adults. Oil was applied to cull rows July 19, about a month later than usual. The early heavy infestation of maggots was found upon examination to con-

sist of about 80 per cent of what appears to be Hylemyia fusciceps and 20 per cent Hylemyia antiqua.

GARDEN SLUG (Agriolimax agrestis L.)

New York C. R. Crosby and assistants (July): Damage by slugs to potatoes, tomatoes, and beans has been reported from Chautauqua and Ontario Counties. (abstract J.A.H.)

SPITTLE INSECTS (Cercopidae)

New York C. R. Crosby and assistants (July): Adults of spittle insects are reported from Wayne County and also reported from Oswego County attacking strawberry. (abstract J.A.H.)

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York C. R. Crosby and assistants (July): The Colorado potato beetle was first observed in July; reports from practically all parts of the State indicate that this insect is as abundant as usual or slightly more so.

South Dakota H. C. Severin (July 12): The Colorado potato beetle appears to be very severe all over the State.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

New York C. R. Crosby and assistants (July): The potato flea beetle was considerably more serious than usual throughout the greater part of the State during the first two weeks of July, and by the third week it had practically disappeared, and but little damage was reported later in the month. (abstract J.A.H.)

Indiana J. J. Davis (July 27): The black/potato flea beetle was reported as damaging potatoes at Ambia July 6.

THREE-LINED POTATO BEETLE (Lema trilineata Oliv.)

New York C. R. Crosby and assistants (July): Specimens of this insect were received from Westfield, where they were attacking potatoes.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

New York C. R. Crosby and assistants (July): Throughout the early part of the month but few leafhoppers were observed throughout the potato-growing sections; by the middle of the month they were still scarce but were beginning to appear and were becoming numerous toward the end of the month. The only excep-

tion to this was Onondaga County, where hopperburn was appearing during the second week in July. (abstract J.A.H.)

Indiana

J. J. Davis (July 27): The potato leafhopper was reported damaging potatoes at Waterloo July 21 and at Bringham July 25.

Illinois

W. P. Flint (July 21): The apple leafhopper is extremely abundant this year and is causing severe injury to potatoes.

Wisconsin

E. L. Chambers (July 25): Early potatoes and dahlias are beginning to show injury from leafhoppers which seem to be more prevalent this summer than last in southern counties. Many dahlias are already showing hopperburn according to the nursery inspection reports.

Iowa

C. N. Ainslie (July 24): This jassid appears to have done much harm to potato fields in the vicinity of Sioux City, producing premature ripening and death of the leaves. Some fields are comparatively free from these pests, while near-by fields suffer. The potato acreage here is large this season.

TARNISHED PLANT BUG (Lygus pratensis L.)

New York

C. R. Crosby and assistants (July): The tarnished plant bug was reported as doing an unusual amount of damage to potatoes in the west-central part of the State, the damage being principally to the tips of the vines. (abstract J.A.H.)

POTATO APHID (Illinoia solanifolii Ashm.)

New York

C. R. Crosby and assistants (July): A few potato aphids were seen in Suffolk County the first of the month, and they were becoming abundant by the middle of the month. (abstract J.A.H.)

TOMATO WORM (Protoparce sexta Johan.)

Mississippi

K. L. Cockerham (June 15): One patch of tomatoes at Biloxi was found to be severely defoliated by the tomato horn worm, the damage having been done during the preceding week.

POTATO PSYLLID (Paratriozoa cockerelli Sulz.)

Utah

Official Record Vol.7, No. 28, July 11: A new disease reported last year from Utah for the first time is now generally distributed in early potato sections of Utah. Affected plants vary from 2 to 60 per cent. Considerable damage to crop expected. (B.L.Richards, Utah Agr. Exp. Sta., Logan.)

(J. E. Graf (July 30): The psyllid which is reported to cause the peculiar disease of potatoes in some sections of the west is Paratriozoa cockerelli.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- New York C. K. Bullock (July 16): Butterflies of the imported cabbage worm are laying eggs in large numbers in Ontario County. Some have hatched and are doing damage.
- North Carolina W. A. Thomas (July 16): Within the past few days this insect has been observed defoliating collards in many home gardens in this section (Chadbourn). Two weeks ago few specimens could be found on this plant, but heavy rains have followed and now many plants are seen completely destroyed.
- Indiana J. J. Davis (July 27): The cabbage worm was destructive to cabbage at Warsaw and Marion July 23 and 24, respectively.
- Wisconsin E. L. Chambers (July 25): Early cabbage is being hard hit by the cabbage worm and indications received from our pest reporters show that considerable loss will result generally over the State this summer.
- South Dakota H. C. Severin (July 12): The imported cabbage worm appears to be very severe all over the State.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

- Maine J. H. Hawkins (July 13): The cabbage maggot was abundant at Newport June 26, cabbage, radishes, and turnips being attacked. The cabbage maggot was found to affect from 11 to 17 per cent of the crop at Cape Elizabeth July 6.
- New York C. R. Crosby and assistants (July): The cabbage maggot was very serious the first half of the month in seed-beds, reports of heavy losses having been received from Wayne, Ontario, Onondaga, and Genesee Counties. (Abstract J. A. H.)

DIAMOND-BACK MOTH (Plutella maculipennis Curtis)

- North Carolina W. A. Thomas (July 2): A rather heavy infestation of this insect was observed on collards growing in a home garden at Chadbourn. The injured areas were very noticeable from a considerable distance. Parasitism seems to be very light in this area this season.

HARLEQUIN BUG (Murgantia histrionica Hahn)

- North Carolina W. A. Thomas (July 17): The harlequin bug was doing serious damage to collards in the vicinity of Chadbourn about two weeks ago, but the recent heavy rains seem to have checked their work somewhat and the injury is not so apparent at this time.

Alabama L. W. Brannon (July 13): The harlequin bug is amore abundant than it was a. month ago on cabbage at Birmingham, but it is less abundant than normal. The first generation started emerging in the insectary on June 18, and was seen in the field at about that time. It can be found in cabbage fields: in this district, but is not causing serious damage.

GREEN PEACH APHID (Myzus persicae Sulz.)

New York W. G. Been (July 16): The spinach aphid is migrating to cauliflower quite rapidly in Suffolk County.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

New York W. E. Field (July 18): These flea beetles are causing great damage on Brussels sprouts and in late cabbage seed-beds in Onondaga County.

STRAWBERRY

STRAWBERRY ROOT APHID (Aphis forbesi Wees.)

North Carolina W. A. Thomas (July 17): The strawberry root louse infestation seems to be increasing rapidly in the strawberry-growing areas of North Carolina. The infestation at Chadbourn is extremely heavy at this time. In many fields it is almost impossible to find a plant that does not carry a fairly heavy infestation. The berry growers are very much discouraged owing to the heavy loss sustained in young plants where the aphids are present in large numbers. Fields planted in early spring already show a loss in plants of from 25 to 50 per cent under wet weather conditions. When dry weather sets in the damage will increase much more rapidly, judging from past records.

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Mississippi R. W. Harned (July 27): Serious injury to strawberries by the strawberry crown borer was reported recently from Meridian.

STRAWBERRY LEAF ROLLER (Ancyliis comptana Fröhl.)

Ohio E. W. Mendenhall (July 12): I find the leaf rollers quite bad in some localities in Miami County, some damage having occurred.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Washington R. L. Webster (July 7): These beetles were reported from Sunnyside as entering houses and becoming a nuisance.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

New York

C. R. Crosby and assistants (July): The asparagus beetle is abundant and causing much trouble in Onondaga and Chautauqua Counties. (abstract J.A.H.)

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata L.)

New York

C. R. Crosby and assistants (July): This insect was reported from Onondaga and Chautauqua Counties during the first half of the month. (abstract J.A.H.)

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Pennsylvania

J. N. Knull (July 25): Larvae and pupae of the Mexican bean beetle were found on bush beans at Espy, Columbia County.

Maryland

W. E. McBath (July 9): The Mexican bean beetle has made its appearance near Glen Echo just across the District line along Conduit Road.

E. Hall (July 17): This insect appeared last year in small numbers at Glendale and has made its appearance in enormous numbers this year. The plants in the sun are badly injured while those in the shade were not so badly injured.

J. A. Hyslop (July 18): The Mexican bean beetle appeared in destructive numbers, completely defoliating garden beans in southeastern Montgomery County the second week in July. Adult beetles were appearing in large numbers July 25.

J. E. Graf (July 30): As far as our reports through correspondence and other sources are concerned in regard to the Mexican bean beetle, this pest now infests all of the State of Maryland, making its ^{first} appearance on the Eastern Shore and southern Maryland this season. It has been reported that it was particularly destructive in some sections of southern Maryland and in the vicinity of Annapolis.

Virginia

Miss Van Horn (July 15): Last year the Mexican bean beetle made its appearance in very few numbers at Barcroft and this year it has appeared in enormous numbers and has defoliated beans in many places. This is the second generation.

W. S. Abbott (July 9): This insect is present in large numbers at Vienna and has destroyed many early plantings of snap beans, and is now going to the lima beans.

North Carolina C. H. Brannon (July 20): This insect is causing tremendous damage to beans all over the State. Damage started late owing to the delayed season.

Georgia E. L. Worsham (July 23): The Mexican bean beetle is doing serious damage throughout the middle and northern part of Georgia. This pest seems not to be present in the southern half of the State. Where it is present it is doing the same amount of damage as last year.

Ohio E. W. Mendenhall (July 20): This insect is quite bad in places in Montgomery County, and was found as far north as Miami County July 13.

Indiana J. J. Davis (July 27): The Mexican bean beetle was reported as far north as Kokomo and Anderson July 21 and as far west as Birdseye July 6.

Alabama L. W. Brannon (July 13): The first generation of Mexican bean beetles began appearing in the fields June 11 and are now present in the fields in large numbers. The first crop of bunch beans escaped serious injury but the second crop will be severely injured unless control measures are used. Adults and larvae were found feeding on cowpeas near a field of destroyed beans and adults and eggs were found on soy beans at the same place. Pole beans are being severely injured in the vicinity of Birmingham. Only 4.6 per cent of the beetles emerged in the hibernation cage. The field infestation is now worse than this survival would indicate.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Maryland J. A. Hyslop (July 10): This insect was observed July 10 in greater numbers on string beans than it has been in the past 10 years on my farm near Silver Spring.

BEAN APHID (Aphis rumicis L.)

Ohio E. W. Mendenhall (July 17): There is an outbreak of the bean aphid on garden beans at Brandt, Miami County, where considerable damage is being done.

AN APHID (Geocica radicola Essig)

Indiana J. J. Davis (July 27): These root aphids were reported destructive to beans at Salem June 30 and Pennville July 2.

PEAS

PEA APHID (Illinoia pisi Kalt.)

New York C. R. Crosby (July 14): This insect is present in a few

fields in Yates and Ontario Counties, but it is causing no real loss.

Wisconsin

E. L. Chambers (July 25): Many complaints have been received that sweet peas are being heavily attacked by the pea aphid. They seem to have suddenly appeared simultaneously throughout the southern part of the State on or about the 15th of July.

J. E. Dudley, Jr. (July 24): The abundance of this insect on peas and alfalfa is fluctuating greatly but at this time there seems to be less than one-fourth as many as last month, being only half the number that occurred last year in Columbia County. Coccinellids are numerous, but not so abundant as usual; syrphids began to increase noticeably about July 1 and at the present time are much more abundant than usual. Several mornings they have been so thick on the ground that a continual buzzing as of a hive of bees resulted. Adults have been collected by the hundreds with a hand net. Nabis ferus is more abundant than usual. Parasites, chrysopids and fungus diseases are much less abundant than usual and have played little part in control.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Maine

J. H. Hawkins (July 13): The striped cucumber beetle was attacking cucumber and squash plants at several places in the State during the first week in July.

New York

C. R. Crosby and assistants (July): In general, this insect seems to be normally abundant throughout the central and western part of the State and was reported as unusually abundant from Monroe and Oswego Counties. (abstract J.A.H.)

Illinois

C. C. Compton (July 14): The striped cucumber beetle is much less abundant than usual. It has not been necessary to use any control measures in Cook County this season.

Wisconsin

J. E. Dudley, Jr. (July 21): This insect was late appearing and did little damage to seedling cucurbits owing to the frequent rains occurring during the short period when cucurbits are most susceptible to its attack (Kenosha County). (June 15-July 1): On account of the heavy precipitation, it was impossible to walk in many fields for a week or ten days to treat the beetles, and by the middle of July they were decidedly scarce in cucurbit fields.

South Dakota

H. C. Severin (July 12): The striped cucumber beetle appears to be very severe all over the State.

Nebraska

M. H. Swenk (June 15-July 15): Complaints of injury by the striped cucumber beetle continued to be received in normal numbers during the entire period covered by this report.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

New York

Sidney Jones (July 2): The 12-spotted cucumber beetle is present on potatoes in Orange County.

North Carolina

C. A. Brannon (June 15): Adults of this species are causing widespread damage to leaves of tobacco and cotton.

MELONS

MELON APHID (Aphis gossypii Glov.)

Georgia

E. L. Worsham (July 23): The cotton aphid is unusually abundant, presumably due to the very wet season.

Nebraska

M. H. Swenk (June 15-July 15): The abundance of aphids referred to in my last report receded to about normal numbers toward the end of June, except in the case of the melon aphid, which continued to be complained of about as usual during the entire period covered by this report.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Nebraska

M. H. Swenk (June 15-July 15): The squash bug was first reported as doing injury on June 30.

CARROT

CARROT RUST FLY (Psila rosae Fab.)

New York

C. R. Crosby and assistants (July): The flies appeared in great numbers in Oswego County and in more than normal numbers in Wayne County by the middle of the month.
(abstract J.A.H.)

ONIONS

ONION THRIPS (Thrips tabaci L.)

New York

J. G. Gaines (July 19): Infestation of this insect is heavier than normal for this time of the year.

Indiana J. J. Davis (July 27): The onion thrips were reported as damaging onions at Elwood July 17.

Illinois C. C. Compton (July 14): The onion thrips is appearing in much larger numbers than at any time in the past five years. Under favorable weather conditions the next few weeks the damage will be considerable.

ONION MAGGOT (Hylemyia antiqua Meig.)

Maine J. H. Hawkins (July 13): The onion maggot was present at Newport June 26 and doing considerable damage to seed-bed onions.

Indiana J. J. Davis (July 27): The onion maggot was reported as damaging onions at Bourbon June 26 and from Calumet City July 17.

New York C. R. Crosby and assistants (July): This insect is present but less abundant than last year in Oswego and Wayne Counties. (abstract J.A.H.)

LESSER BULB FLY (Eumerus strigatus Fall.)

Michigan E. McDaniel (July 19): The first case of an actual attack of the lesser bulb fly ^{on onions} has just occurred. Samples of onions destroyed by this insect arrived today from Leslie.

SWISS CHARD

BEET FLEA BEETLE (Disonycha xanthomalaena Dalm.)

Nebraska M. H. Swenk (June 15-July 15): Swiss chard was badly injured by the spinach flea beetle during the early part of the month at Lincoln.

LETTUCE

SIX-SPOTTED LEAFHOPPER (Cicadula sexnotata Fall.)

New York J. G. Gaines (July 19): There is a moderate infestation on lettuce in Wayne County.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano.)

California Monthly News Letter, Los Angeles County Hort. Comm. Vol. 10, No. 7, July 15: Out of 800 acres of green peppers growing in

Los Angeles, 452 acres have been inspected to date and fields totaling 371 acres found infested with the pepper weevil.

SWEET POTATO

SWEET-POTATO FLEA BEETLE (Chaetocnema confinis Cr.)

South Carolina M. H. Brunson (July 10): The sweet potato flea beetle has been damaging sweet potatoes and corn quite extensively.

TORTOISE BEETLES (Cassidinae)

Mississippi R. W. Harned (July 27): Tortoise beetles seem to be rather abundant on sweet potato and morning glory vines in all parts of the State. On July 11, Inspector W. L. Gray of Natchez reported that he had never before seen them so abundant as they are at the present time in his territory. They are to be found in practically every sweet potato field and on practically every morning glory vine examined. The species that have been received at this office are Chelymorpha cassidea Fab., Chirida guttata Oliv., Metriona bicolor Fab., and M. bivitta Say.

PEANUTS

TOBACCO THRIPS (Frankliniella fusca Hinds)

North Carolina W. A. Thomas (July 2): A small field of peanuts near Chadbourn was observed in which practically every terminal bud seemed to be dying. On closer examination it was found that these buds were heavily infested with thrips, the injury having occurred just before the young leaves unfolded. After the leaves unfold, the injured areas turn brown, which gives the buds the appearance of dying. Every plant in the field was more or less injured.

FOREST AND SHADE TREE INSECTS

PERIODICAL CICADA (Tibicina septendecim L.)

New York Weekly News Letter N. Y. St. Coll. Agr. July 2: Orange County (Sidney Jones): The periodical cicada was very active this week. The cicadas were ovipositing in a pear orchard and a vineyard near Newburgh and caused considerable damage on both. Young trees in infested areas are being covered with cheese cloth. Dutchess County (Ray Bender): The cicada injury is starting to show up on trees; the ends are withering and dying back, probably due to drying out of the tissue. One vineyard is showing a large amount of dead areas due to locust stinging. Ulster County (E. J. Hambleton): Cicada injury to grape and apple has caused some comment. The woodland trees are losing

the tops of the smaller branches. The worst infestation seemed to occur two miles north of New Paltz, one mile south of Marlboro, and in the vicinity of Flatbush. Greene County (A. S. Mills): Cicadas are not making so much noise as before. They have injured many of the terminals in a few apple and pear orchards.

Weekly News Letter N. Y. St. Coll. Agr. July 9: Orange County (Sidney Jones): The periodical cicadas are still stinging orchards and vineyards. Many of the injured twigs were broken off by the recent heavy winds. Dutchess County (Ray Bender): The cicadas are beginning to disappear. Those that are left are more active. Apparently the oviposition is practically at an end. Where they have been present in numbers their work can be seen at a distance.

Weekly News Letter N. Y. St. Coll. Agr. July 16: Orange County (Sidney Jones): A young orchard of apples which was not covered with cheese cloth was severely damaged by periodical cicada. Some trees that were wrapped were injured. However, the work of this insect now appears to be over. Very few can be seen alive. Dutchess County (Ray Bender): One block of about 2,000 young trees has been fairly well cleaned up by the cicadas, while a block of 700 trees just across the hedgerow which were covered show no injury.

GYPSY MOTHE (Porthetria dispar L.)

Canada

Official Record, Vol. 7, No. 28, July 11: Having determined, as a result of the apparent eradication of the gypsy moth in the Province of Quebec, Dominion of Canada, which has been confirmed by field surveys made by the Canadian Department of Agriculture, that the risk of introducing this pest into the United States is no longer involved in the importation of Christmas trees and greens from that Province, Acting Secretary Marvin, on June 27, under the authority conferred by the act of Congress approved August 20, 1912 (37 U.S. Stats. 315), revoked Notice of Quarantine No. 57 (Foreign), which removed the quarantine established thereby from the Province of Quebec. The order of revocation took effect July 1.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (July 26): The bagworm has made its appearance again in Springfield (Clark County) on orbervitae and other evergreens, doing some damage.

Indiana

J. J. Davis (July 27): Bagworms were reported during July from Danville on maple and also reported from Aurora.

Mississippi

R. W. Harned (July 27): During the first week in July correspondents at Meridian and Canton reported rather serious infestations of bagworm on arborvitae.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

New York E. E. Frane (July 10): There are few specimens of this insect present in Wayne County.

Indiana J. J. Davis (July 27): The tussock moth was reported from Franklin July 9.

Wisconsin E. L. Chambers (July 25): The white-marked tussock moth is more abundant than usual this year and seems to be pretty well established over the State. The larvae are fairly well developed now and many have pupated.

Nebraska M. H. Swenk (June 15-July 15): The white-marked tussock moth was first reported doing serious injury on elm trees in Lincoln on June 29. Other reports were subsequently received from other localities during the period covered by this report.

CANKERWORMS (Geometridae)

New York G. H. Salisbury (July 2): Cankerworms are less active than formerly in Chautauqua County.

Pennsylvania A. B. Champlain through T. L. Guyton (July 6): Cankerworm injury was very evident in northwestern areas of Pennsylvania visited on inspection trips during June. From Tyrone to Puxsuttawney and Belleville both orchards and forest trees showed considerable browning and defoliation. A variety of deciduous trees were affected, including apple. On the dates, June 20 to 23, the caterpillars were about full grown and many were descending to pupate. These caterpillars come from the trees on threads of silk, and it is impossible to walk or drive under the trees without being covered with them. The egg parasite Trichogramma minutum Riley has not, so far, been found under natural conditions.

T. L. Guyton (July 20): An interesting observation in connection with the above cankerworm infestation was the presence of a predacious ground beetle, Calosoma frigidum Kby. This useful insect was very plentiful in all localities where the cankerworms were present. It is no doubt a valuable asset in reducing the cankerworm hordes and should be protected. Many of these beetles were found on the trees and foliage and on the ground, feeding on the cankerworm larvae. The writer has observed a species of Calosoma beetle in great numbers during a cankerworm outbreak on scrub oaks in Colorado; and in Connecticut C. willcoxi Lec. and C. frigidum were plentiful during cankerworm ravages in that State. In every case these beetles consumed great numbers of the worms. It is also interesting to remember that Calosoma sycophanta L. was imported from Europe to combat the gypsy moth in New England.

FALL WEBWORM (Hyphantria cunea Drury)

Nebraska

M. H. Swenk (June 15-July 15): The fall webworm began to appear on the trees in such numbers as to occasion complaints during the last few days in June and the early part of July.

PACIFIC RED SPIDER (Tetranychus pacificus McGregor)

California

E. A. McGregor (July 23): Probably the worst pest of shade trees in the great San Joaquin Valley of California is the Pacific red spider. There are facts which indicate that the sycamore tree, Platanus racemosa, may be the native host of this mite. Very severe injury occurs every year to a certain percentage of these trees, resulting at times in almost complete defoliation. The chinaberry or umbrella tree, is the commonest ornamental tree in the cities and towns of central California. Frequently the streets are lined solidly with these trees. Almost every summer the Pacific red spider becomes so abundant on the chinaberry trees as to cause very heavy shedding of foliage, resulting commonly in the loss of their shade value. Certain cities (Lindsay for example) maintain a department of pest control for the almost exclusive purpose of combating this pest. During the present season every tree in town has been sprayed at least once, and many of them twice. The present correspondent has for the past several years conducted an incidental study of this pest and hopes to publish on it eventually.

GALL MITES (Eriophyes spp.)

Nebraska

M. H. Swenk (June 15-July 15): Gall mites of various species continued to be reported during the second half of June and early July. These included not only the pouch galls on wild plum and elm mentioned in my last report, but also during the latter part of June the walnut velvety leaf stem gall, Eriophyes sp., and the linden leaf gall, E. abnormis.

ASH

ASH TREE BORER (Podosesia fraxini Lugger)

South Dakota

H. C. Severin (July 12): Shade trees and windbreaks are badly injured in numerous sections of the State. This is the most serious pest of ash.

ASH APHID (Pemphigus fraxinifolii Thom.)

Nebraska

M. H. Swenk (June 15-July 15): The ash aphid was reported injuring ash trees during the period covered by this report.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

outh Dakota

H. C. Severin (July 12): Many housekeepers have complained about boxelder bugs entering homes during June and early July.

BOXELDER APHID (Periphyllus negundinis Thomas)

braska

M. H. Swenk (June 15-July 15): An infestation of boxelder trees with the boxelder aphid appeared in several parts of the State during late June and early July.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Boisd.)

io

E. W. Mendenhall (July 20): The catalpa sphinx is beginning to show up again in Montgomery County. There are a good many catalpa trees planted in this county and this pest is well supplied with food.

ELM

WOOLLY ELM APHID (Eriosoma americanum Riley)

braska

M. H. Swenk (June 15-July 15): The woolly elm aphid was frequently reported injuring elm trees.

ELM BORER (Saperda tridentata Oliv.)

isconsin

E. L. Chambers (July 25): Several 40-foot elms in Madison were examined recently upon complaint of the city forester and found practically dead with a severe infestation of this borer. The bark had sloughed off in large sheets. These borers, however, are believed to be a secondary infestation.

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

io

E. W. Mendenhall (July 15): Some of the elm trees in Troy are attacked severely by the elm leaf beetle. (July 27): The elm leaf beetle was found infesting the European elm trees at the National Cash Register establishment at Dayton in 1904, which was the first outbreak in the State. It has done considerable damage to the elms in the past, but with diligence and careful spraying it is pretty well under control with the exception of a few outbreaks outside of the city of Dayton. The pest has been confined to the Miami Valley, southwestern Ohio. (July 26): The elm leaf beetle is quite bad on a few elm trees near New Carlisle, Clarke County. There are not

many elms in New Carlisle, but they are severely attacked.

A CASE BEARER (Coleophora sp.)

New York

W. D. Been (July 9): Case bearers were found on elm in Suffolk County.

LOCUST

LOCUST BORER (Cyrtene robiniae Forst.)

Indiana

J. J. Davis (July 27): The locust borer was reported from Francesville and Vincennes July 6.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis Rathv.)

Indiana

J. J. Davis (July 27): The cottony maple scale became conspicuous throughout central Indiana usually on maple, but occasionally on grape. The ladybird, Hyperaspis binotata, has been especially abundant where the scale is destructive.

Illinois

W. P. Flint (July 21): Numerous reports of infestation by the cottony maple scale have come in from central and northern Illinois. In many cases these reports have been accompanied by specimens. Hatching started in central Illinois about July 1 and in northern Illinois a few days later. Predators are rather abundant.

PINE

NANTUCKET PINE MOTH (Rhyacionia frustrana Comst.)

Nebraska

M. H. Swenk (June 15-July 15): Serious injury to the new growth in a grove of western yellow pines near Stuart, Holt County, by the pine tip moth was reported during the third week in June.

SPRUCE SAWFLY (Neodiprion abietis Harr.)

New York

A. B. Burrell (July 2): The sawfly larvae on pitch pine are continuing their ravages unabated.

PINE BARK APHID (Chermes pinicorticis Fitch)

Ohio

E. W. Mendenhall (July 3): The pine bark aphid is quite bad in a nursery in Columbus.

PINE SCALE (Toumeyella pinicola Ferris)

New York

C. R. Crosby (June 4): Specimens of this insect were received from Orange County, where they were attacking pine.

SPRUCE

SPRUCE BUD SCALE (Physokermes piceae Schrank)

Wisconsin

E. L. Chambers (July 25): The spruce trees in several nurseries have been found heavily infested with this scale, and some trees were reported by the inspectors as wilting under the attack.

SPRUCE GALL APHID (Chermes abietis Kalt.)

New York

Ray Bender (July 9): Spruce gall aphids seem to be fairly numerous on apple in Dutchess County.

SYCAMORE

SYCAMORE LEAF ROLLER (Ancylis platanana Clem.)

Ohio

E. W. Mendenhall (July 19): I find the sycamore leaf folder in Montgomery County doing considerable damage to the leaves of sycamore.

TAMARACK

LARCH SAWFLY (Nematus erichsoni Hartig.)

Wisconsin

E. L. Chambers (July 25): The larch sawfly has been defoliating a large number of tamarack trees in the northwestern part of the State this summer. Several pest reporters have submitted large numbers of species.

WILLOW

CURRENT STEM GIRDLER (Janus integer Nort.)

Indiana

J. J. Davis (July 27): The willow shoot sawfly was reported damaging shoots of basket willow at Richmond July 19.

INSECTS AFFECTING GREENHOUSE AND
ORNAMENTAL PLANTS AND LAWNS

RED SPIDER (Tetranychus telarius L.)

- Indiana J. J. Davis (July 27): The red spider was abundant in evergreens at Rising Sun July 17 and at Aurora July 24.
- Wisconsin E. L. Chambers (July 25): There has been an increasing number of complaints during the past week from red-spider injury. Raspberry plantings and evergreens seem to be hard hit this summer.
- Nebraska M. H. Swenk (June 15-July 15): Injury by the red spider Tetranychus bimaculatus, on evergreens of various kinds was commonly reported during the entire period here covered.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

- Georgia O. I. Snapp (July 20): The Fuller's rose beetle is more abundant than usual this year. Some complaints of damage to foliage of ornamentals and other plants have been received.

BLACK STINK BUG (Cosmopelma bimaculata Thos.)

- New York G. H. Griswold (July 27): There is a heavy infestation of this insect in a flower garden of snapdragons and columbine at Altamont, Albany County.

COLUMBINE

COLUMBINE LEAF MINER (Phytomyza aquilegiae Hardy)

- Virginia W. S. Abbott (July 10): A leaf miner, probably Phytomyza aquilegiae, has practically destroyed several beds of columbine.

COLUMBINE BORER (Papaipema purpurifascia G. & R.)

- New York G. H. Griswold (July 13): This species is heavily infesting the roots of cultivated columbine in gardens of the Department of Floriculture.

LEATHOPPERS (Jassidae)

- South Dakota H. C. Severin (July 12): Greater damage than usual to columbine by these insects has been reported from many localities.

ELDERBERRY

SPINDLE WORM (Achatodes zeae L.)

sconsin E. L. Chambers (July 25): The spindle worm continues to be sent into the office for identification from both ornamental and wild species of elder. They have never been reported so abundant as they have this year.

DELPHINIUM

LARKSPUR LEAF MINER (Phytomyza delphiniae Frost)

w York G. H. Griswold (July 12): This is a new pest, just described by Frost (Can. Ent. 60: 77-8, 1928), and is common in gardens at Ithaca attacking delphinium.

IRIS

IRIS BORER (Macronoctua onusta Grote)

sconsin E. L. Chambers (July 25): The iris borer has been observed as being more serious this summer than last by our nursery inspectors. One planting observed in Dane County had nearly 100 per cent infestation.

PALM

A RHINOCERUS BEETLE (Strategus julianus Burm.)

ssissippi R. W. Harned (July 27): Beetles belonging to the species Strategus julianus have been reported as causing medium injury to palms at Gulfport and Long Beach.

PUSSY WILLOW

WILLOW CURCULIO (Cryptorhynchus lapathi L.)

io E. W. Mendenhall (July 21): Many of the pussy willows in the nurseries in Clark County are infested with the mottled willow borer.

ROSE

ROSE SAWFLY (Caliroa aethiops Fab.)

diana J. J. Davis (July 27): The rose slug was reported abundant at Spiceland and South Bend June 27 and Valparaiso July 23.

Nebraska M. H. Swenk (June 15-July 15): The rose slug was considerably complained of in southern Nebraska during the period from June 16 to 28.

A ROSE GALL (Rhodites nebulosus Bass.)

Nebraska M. H. Swenk (June 15-July 15): During the period from June 16 to 28, reports of infestations of roses by the galls Rhodites nebulosus were received.

SPIRAEA

A BUTTERFLY (Lycaenopsis pseudorgiolus B. & L.)

Ohio E. W. Mendenhall (July 14): The spiraea plants in the nurseries at Brandt, Miami County, were infested with the common blue Lycaena ladon and caused some damage.

SPIRAEA APHID (Aphis spiraeicola Patch)

Indiana J. J. Davis (July 27): Aphids were abundant on spiraea at LaFayette during June and July and at Greentown July 4.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

MOSQUITOES (Culicidae)

Indiana J. J. Davis (July 27): Mosquitoes were very abundant at LaFayette and Muncie early in July according to reports received.

Georgia O. I. Snapp (July 20): Mosquitoes are troublesome earlier than usual this year. Frequent rains are probably the cause.

FLEAS (Ctenocephalus spp.)

General F. C. Bishopp (June): Reports of infestations of houses and yards with dog and cat fleas have been received from Pennsylvania, Maryland, New Jersey, New York, and South Carolina.

Ohio T. H. Parks (July 23): More questions and appeals for help in controlling fleas have reached us than for several years. Open sheds, lawns, and living rooms are all listed as breeding places. (Both dog and cat fleas were included in the reports.)

Indiana J. J. Davis (July 27): Fleas reported the past month from Greensburg, LaFayette, Beech Grove, Warsaw, and Crawfordsville. One infestation at LaFayette July 25 was reported as occurring in the lawn.

Illinois

W. P. Flint (July 21): As is usually the case during the summer months, numerous requests are being received for assistance in cleaning up outbreaks of fleas.

Georgia

E. L. Worsham (July 23): Cat and dog fleas have been invading residences in Atlanta much more frequently than ever observed before.

CATTLE

NORTHERN CATTLE GRUB (Hypoderma bovis DeG.)

New York

F. C. Bishopp and H. M. Brundrett (June 21-30): Although the average number of grubs per animal in dairy herds near Schenectady and Utica is comparatively low, the average ranging from 1/2 to 6 per head, there are still a number of cattle with moderate infestations (maximum 27 grubs in one host). The cloudy, rainy weather has reduced annoyance from heel flies, but running of herds has been observed on sunny days. A few third-instar larvae were found in the backs of cattle on June 30, which is an unusually late date for grubs to be coming to the subdermal tissues.

HORN FLY (Haematobia irritans L.)

New York

F. C. Bishopp (June 21-30: Horn flies are now causing some annoyance to dairy cattle around Schenectady and Utica, and a few dairymen have begun to use sprays. The average number per animal is about 150, with a range from 20 to 1,500.

Indiana

J. J. Davis (July 27): Cattle flies were causing considerable annoyance to dairy cattle at Indianapolis and Kendalville July 18 and 22.

SHORT-NOSED OX LOUSE (Haematopinus eurysternus Nitz.)

New York

F. C. Bishopp (June 22): Some trouble from infestations of grown cattle is being experienced in the vicinity of Schenectady. The lice are most abundant in the ears, but are also scattered over the cattle.

HORSE FLY (Tabanus lasiophthalmus Macq.)

New York

F. C. Bishopp (June 22): Tabanids are causing considerable annoyance to dairy cattle in certain pastures around Schenectady.

TURKEYS

BIRD TICK (Haemaphysalis chordeilis Pack.)

Michigan

F. C. Bishopp (June 19): A report has been received from Michigan that this tick began to attack turkeys on this date.

HOUSEHOLD AND STORED -

PRODUCTS INSECTS

TERMITES (Reticulitermes sp.)

- Indiana J. J. Davis (July 27): White ants were reported as destructive at Crawfordsville and Connersville late in June. At Lafayette they were reported tunneling stalks of dahlia July 23.
- Kansas J. W. McColloch (July 20): Since my last report termite injury to dwellings has been reported from Kansas City, Abilene, Galena, Rose Hill, and Savonbery. Damage to trees was reported from Pratt.
- California Washington Daily News July 27: A recent survey conducted throughout southern California by Alfred Ansell Jr., a Los Angeles scientist, revealed a property damage estimated at \$209,000 in 14 cities and towns included in the survey. The damage to individual buildings ranged from a few dollars to \$1,500. One example of damage was revealed when a huge wooden cover on a 100,000 gallon oil tank collapsed; it was found honeycombed with termites. Stepping into a closet after his coat, a man suddenly found himself falling through the floor; termites had eaten away the supports. In another town a woman was having her piano moved across a room when one end broke through a termite-damaged floor.

POWDER POST BEETLES (Lyctus spp.)

- Wisconsin E. L. Chambers (July 25): The proprietor of a summer resort in Bayfield County reported that several log cabins built last winter have shown evidence this summer of an extremely heavy infestation of the powder post beetles despite all precaution taken to avoid it.
- Kansas J. W. McColloch (June 21): These beetles are working in the oak pews of a church and have been present in these pews for nine years.

ANTS (Formicidae)

- Indiana J. J. Davis (July 27): We continue to receive reports of an abundance of ants in lawns and gardens from all sections of the State.
- Illinois W. P. Flint (July 21): The warm, wet weather of the present summer has been very favorable to the activities of a number of common species of ants. Numerous reports of invasions of houses particularly by Lasius niger americanus and Tapinoma sessile, have been received.

Nebraska

M. H. Swenk (June 15-July 15): House ants of several species were complained of to an unusual extent during the period covered by this report, and especially during early July.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas

J. W. McColloch (July 15): The cigarette beetle is infesting mohair furniture in a dwelling at Kansas City.

CARPET BEETLE (Anthrenus scrophulariae L.)

Nebraska

M. H. Swenk (June 15-July 15): Carpet beetles were complained of to an unusual extent during the period covered by this report, Anthrenus scrophulariae being the most prominent.

AGRI. REF.

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR AUGUST, 1928

The rather serious grasshopper outbreak previously reported from the western part of the two Dakotas and Nebraska continued during the early part of this month. In Scotts Bluff County, Neb., and in the Platte River Valley practically all crops, including grains, alfalfa, sugar beets, and fruit trees, were attacked.

Recent scouting has disclosed the presence of the Japanese beetle in Hartford and New Haven, Conn., in Springfield, Mass., generally throughout northern and eastern Md., in many places in Del., at Alexandria, Va., and at Lewiston, Pa.

In this number of the bulletin there is a detailed statement of the Hessian fly survey of Illinois. In most sections of the State this insect is less abundant this season than last. There are moderately heavy infestations along the southwestern side of the State. The average infestation of the counties surveyed amounts to 5.5 per cent as compared with 4.3 per cent last year. There is also a detailed report of the wheat joint worm survey carried on in Illinois in conjunction with the Hessian fly work. Present indications are that a very heavy infestation of the Hessian fly is developing in southeastern Nebraska.

In general throughout the country the corn ear worm is not so serious as it usually is.

Very serious wireworm injury is being reported from Brunson, Hampton County, S. C.

Though generally cutworm trouble is not so serious as usual this season, the W-marked cutworm is reported as seriously damaging crops in Manitowoc County, Wis.

The fruit tree leaf roller and the apple and thorn skeletonizer are decidedly more prevalent than usual in parts of New York State.

The pear midge is reported as very serious in the Hudson River Valley, N. Y., where in some cases 50 per cent of the crop has been destroyed this season.

The oriental peach moth, though not abnormally destructive in the older infested territory, is now reported from as far north as Jackson and Williamson Counties, Ill., and quite serious in Greene County, O.

The imported cabbage worm is reported as causing very serious losses in northern Illinois and southern Wis. Less serious injury is reported from western New York State and the Birmingham district of Ala.

The cabbage maggot is more serious than it has been for many years in central and western New York.

The velvet bean caterpillar is reported for the first time as a primary pest of peanuts in Fla. Usually this insect moves into peanuts from infested velvet bean fields.

Recent inspection in Ala. indicates that the campaign to control the sweet-potato weevil is promisingly successful.

The newly discovered wireworm Heteroderes laurentii Guer. is recorded as showing what appears to be a preference for certain varieties of sweet potato in Ala.

The changa is doing more damage than it has in the past several years in Fla.

A very heavy outbreak of the semitropical armyworm, covering practically all of the Florida peninsula, has been under way throughout the month. In addition to defoliating its native food plant, it has done much damage to ornamentals and castor beans. This is the heaviest outbreak of this insect that has occurred since 1917.

Brood II of the periodical cicada, the first large brood recorded from the Middle Atlantic States, reappeared this spring. This brood occurs, in general, in the territory immediately east of Brood I. A few doubtful records have been made in past years from Indiana, Illinois, and Michigan, but not one of these was confirmed by this year's appearance. In general, the brood was centered about northern New Jersey, southern New York, and south-central Connecticut. The records from the territory southward to North Carolina were very scattering and the colonies were comparatively small.

Brood XXVII of the tridecim race, recorded for the first time in 1902 from Franklin County, Miss., and again recorded from that locality in 1915, in which year it was also recorded from Chicot and Philips Counties, Ark., appeared this year at a single point and with a single specimen at Yazoo City, Miss.

The summary number of the Insect Pest Survey Bulletin which will appear in December will include a complete list and map of all of the localities so far recorded for these two broods.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1928

The bertha armyworm, Barathra configurata Walk., is present in outbreak form in southern Alberta and in southern Manitoba, affecting sweet clover, flax, and many garden plants.

Few reports of cutworm damage have been received from any part of the Dominion. Reports indicate that cutworms are everywhere subnormally abundant.

While the numbers of grasshoppers in the outbreak area in the Chilcotin district, British Columbia, far exceed normal, no great damage has been done.

Reports from sections of British Columbia, Ontario, and New Brunswick indicate that the imported cabbage worm is unusually prevalent this season.

The wireworm Ludius acreipennis Kby. has caused serious losses in wheat, particularly on summer-fallowed land in the Peace River district, Alberta.

The corn ear worm is prevalent in cornfields in southern Ontario.

There is a heavy infestation of the green apple aphid in orchards of the Okanagan valley, British Columbia, principally affecting young trees.

The pear slug is prevalent on pear, cherry, and hawthorn throughout the lower Fraser River valley, British Columbia.

A somewhat larger than average second brood of the codling moth is expected in the Niagara district, Ontario, and owing to a shortage of apples in many orchards the percentage of codling moth injury will probably run unusually high.

The beetle Haltica binarginata Say has caused the complete defoliation of willows on the southern part of Vancouver Island, British Columbia.

The willow leaf beetle Galerucella decor Say has stripped most of the willows throughout south-central Manitoba and occurs from Winnipeg west to the Saskatchewan boundary.

The tussock moth Hemerocampa pseudotsugata McD. attacked two small areas of Pseudotsuga, trifolia Britt., near Kamloops and Pritchard, British Columbia, a few of the trees being 90 per cent defoliated.

The forest tent caterpillar caused the complete defoliation of

shade trees in northeastern Alberta. Egg-rings of this species have been received from points all over the territory infested this spring.

A survey in New Brunswick indicates that the larch sawfly is comparatively scarce in the province this year.

In the Kamloops area and the Chilcotin district, British Columbia, biting flies, including tabanids, simuliids, and leptids, are reported as much more troublesome than usual.

An outbreak of the rainpool mosquito, Aedes vexans Mgn. occurred in many sections of Ontario and Quebec as a result of heavy rains in July.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Nebraska

M. H. Swenk (July 15-August 1): Damage by grasshoppers, especially Melanoplus bivittatus Say, continues to be reported from western Nebraska. Crops are being seriously damaged in Scott's Bluff County and somewhat less severely in the Platte Valley east to Dawson County, where not only alfalfa and grain fields but also sugar beets are being attacked. A man in Colfax County reports that his fruit trees are being stripped by grasshoppers. In eastern Nebraska Melanoplus differentialis Thos. was attaining its wings during the last few days in July.

WHITE GRUBS (Phyllophaga spp.)

New York

C. R. Crosby and assistants (August 7): Doing considerable damage in the extreme western part of the State. (Abstract J.A.H.)

Ohio

E. W. Mendenhall (August 1): I find aster plants in a nursery at New Carlisle (Clark County) affected by the white grubs which are doing considerable damage. The ground where planting was made was in sod last year.

Texas

F. L. Thomas (July 10): Eight hundred and five beetles trapped in two hours. 8:15-10:15 P. M. Stripping foliage on young pecans and Chinese elm trees at College Station.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

New York

C. R. Crosby and assistants (August 7): Though occasionally reported doing commercial damage, as a whole this insect is not unusually abundant this year. (Abstract J. A. H.)

Nebraska

M. H. Swenk (July 15-August 1): The last complaint of injury by the rose chafer was sent in from Cherry County on July 23.

JAPANESE BEETLE (Popillia japonica Newm.)

United States

C. H. Hadley (August 10): Locations at which scouts have found specimens of the Japanese beetle this season include: Hartford and New Haven, Conn.; Springfield, Mass.; Baltimore, Cambridge, Chesapeake City, Delmar, Ellton, Perryville, and White Marsh, Md.; Clayton, Delmar, Dover, Harrington, Middleton, Port Penn, and Townsend, Del.; Washington, D. C.; Alexandria, Va.; and Lewiston, Pa.

In the center of the infested area the insects have been less injurious than in some previous seasons but in the more recently infested districts they are increasing in number.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut R. B. Friend (July 25): Adults have been much more abundant this year than formerly at New Haven.

ARMYWORM (Cirphis unipuncta Haw.)

Wisconsin E. L. Chambers (August 10): Several small outbreaks of the armyworm were discovered before more than 20 or 30 acres of crops were destroyed in Ozaukee and Manitowoc Counties, but control measures were necessary to check them.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Mississippi R. W. Harned (August 27): Several complaints in regard to the southern grassworm have been received recently, although only slight or medium damage has been caused in each case. Specimens collected on corn have been received from Walnut Grove, West Point, Yazoo City, Valley, Kosciusko, and Pascagoula. Specimens collected on arborvitae and privet were sent in from McComb.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Illinois W. P. Flint (August 2): The wheat insect survey which is made the first of August of each year by the entomologists of the Natural History Survey and the Federal Bureau of Entomology co-operating has just been completed. This survey during the present season covered wheat fields in 53 counties in the principal wheat-growing areas of the State, involving the examination of almost 25,000 wheat tillers. In most sections of the State the Hessian fly is less abundant this season than last, and the infestation on the whole is light. There is a moderately heavy infestation along the southeastern side of the State in the group of counties starting with Wabash and Edgar on the south and extending northward to Champaign and Vermilion counties, with the heaviest infestation in Lawrence, Clark, Coles, Douglas and nearby counties.

The following table shows the infestation of tillers by the Hessian fly in the different counties of the State. While the Hessian fly is generally present in northern, central, and southern Illinois, it is very scarce this year. In a narrow belt across the south-central counties, as already mentioned, there is a moderately heavy infestation.

In most counties early-sown wheat will probably not show a heavy infestation by the fly this fall. General early seeding will, of course, bring up the infestation next year.

County	Ave. : Per cent: Infested:County	County	Ave. : Per cent: Infested:County	County	Ave. : Per cent: Infested:
Adams	: .8	Greene	: 6.7	Menard	: 3.2
Brown	: 3.5	Hancock	: .3	Monroe	: 3.4
Bureau	: .8	Henry	: .2	Montgomery	: 11.0
Cass	: .6	Iroquois	: 1.0	Morgan	: 1.6
Champaign	: 8.8	Jackson	: 1.2	Moultrie	: 11.0
Christian	: 10.2	Jersey	: 10.5	Ogle	: 0
Clark	: 30.0	Kankakee	: 3.0	Perry	: 1.2
Clinton	: 13.0	LaSalle	: 1.2	Piatt	: 12.0
Coles	: 16.0	Lawrence	: 4.2	Randolph	: 3.2
Crawford	: 52.0	Lee	: .3	Rock Island	: 0
DeKalb	: .3	Livingston	: 2.0	Saline	: 4.0
DeWitt	: 1.0	Logan	: 2.2	Sangamon	: 2.2
Douglas	: 11.0	McDonough	: 2.5	Schuyler	: 5.0
Edgar	: 14.0	McLean	: 2.5	Tazewell	: 1.2
Edwards	: 6.0	Macon	: 12.0	Vermilion	: 7.0
Ford	: 1.3	Macoupin	: 2.8	Wabash	: 6.0
Fulton	: 2.6	Madison	: 4.0	Whiteside	: .6
Gallatin	: 1.5	Mason	: 1.0	Will	: 1.0
				Williamson	: 1.1

Nebraska

M. H. Suenk (July 15-August 1): Further evidence that a general infestation by the Hessian fly is developing in southeastern Nebraska was secured during July. About one-half of the fields in west-central Seward County have been found infested, while in certain sections of Buffalo County some fields have been damaged as much as 20 per cent. There is a slight infestation as far west as south-central Redwillow County. Reports of damage around Benkelman, in Dundy County, have not been verified and are regarded as open to doubt.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Illinois

W. P. Flint (August 21): The cooperative wheat-insect survey has just been completed. The following table gives the result of joint-worm infestation ascertained in this survey which covered 53 counties.

County	Ave. : Per cent: Infested:County	County	Ave. : Per cent: Infested:County	County	Ave. : Per cent: Infested:
Adams	: .8	Clinton	: 4.3	Edgar	: .2
Brown	: .5	Coles	: 0	Edwards	: .4
Bureau	: .2	Crawford	: 1.0	Ford	: 0
Cass	: 0	DeKalb	: .3	Fulton	: .0
Champaign	: 0	DeWitt	: 0	Gallatin	: 2.6
Christian	: .7	Douglas	: 0	Greene	: .2
Clark	: .2		:		:

County	: Ave. : : Per cent: : Infested:	County	: Ave. : : Per cent: : Infested:	County	: Ave. : : Per cent: : Infested:
Hancock	: 0	McLean	: 0	Piatt	: 0
Henry	: .4	Macon	: 0	Randolph	: 6.8
Iroquois	: 0	Macoupin	: 0	Rock Island	: .2
Jackson	: .2	Madison	: .4	Saline	: 0
Jersey	: 0	Mason	: 0	Sangamon	: .8
Kankakee	: 0	Menard	: 1.0	Schuyler	: 0
LaSalle	: .4	Monroe	: 0	Tazewell	: 0
Lawrence	: 0	Montgomery	: .2	Vermilion	: .4
Lee	: .3	Morgan	: .2	Wabash	: 0
Livingston	: 0	Moultrie	: 0	Whiteside	: 1.0
Logan	: 2	Ogle	: .5	Will	: 0
McDonough	: 4.0	Perry	: .2	Williamson	: .3

WHEAT SHEATH WORM (Harmolita vaginicola Doane)

Michigan

R. H. Pettit (August 15): The wheat sheath worm has appeared at Maple City and is reported to be quite plentiful in individual fields.

CHINCH BUG (Blissus leucopterus Say)

Florida

J. R. Watson (August 20): Chinch bugs have been fairly as injurious to St. Augustine grass lawns as usual this time of year. The householders in increasing numbers are substituting centipede grass for St. Augustine grass in their lawns as a result of the depredations of this insect.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

New York

M. N. Taylor (August 7): Scarce to date in Erie County.

Illinois

W. P. Flint (August 21): There have been few seasons in the past when this insect has been as scarce as it is this season. Examinations in a large number of cornfields in east-central Illinois have failed to show a single ear of corn infested by this worm. To date no moths have been taken at bait traps or seen in the evening about flower beds, where they are usually quite numerous.

Iowa and
South Dakota

C. E. Ainslie (August 14): Not for many years has there been less damage done by the corn ear worm than during the present season at Sioux City. Garden sweet corn that was planted early was injured severely by these larvae but field corn here and in southeastern South Dakota is almost entirely free from attack.

STALK BORER (Papaipema nebris nitela Guen.)

Connecticut

W. E. Britton (July 24): Very destructive to corn in a small section of Wetherfield, nearly every stalk being infested. (August 24): Reported from Thomaston, Madison, and Meriden.

Nebraska

M. H. Swenk (July 15-August 1): Complaints of injury to corn by the stalk borer continued to come in during the last half of July. One report related to injury to tomatoes. The reports covered the area from Knox and Rock Counties south to Gage and Nemaha Counties and west to Custer and Furnas Counties.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Texas

F. L. Thomas (July 24): Attacking cowpeas at Harlingen.

MAIZE BILLBUG (Sphenophorus maidis Chitt.)

Kansas

J. W. McColloch (August 7): The maize billbug has caused some loss to corn in a field near Marion.

WIREWORMS (Elateridae)

South Carolina

J. N. Tenhet (August 1): I went to Brunson and investigated wireworms there and in the surrounding territory. Most of the damage seems to be due to larvae of Horistonotus spp., although I have reason to suspect some injury by Monocrepidius vespertinus Fab., as I found adults of this species in abundance. Farmers' estimate of damage this year varied from 10 to 20 per cent of all crops in Hampton County. Farmers all say that the injury is increasing rapidly, and has been doing so for the last few years. Business men told me that wireworms had caused a depreciation in the value of farm land, in the last five years, that would be conservatively placed at one million dollars. This was entirely credible after seeing the territory. I saw field after field grown up in weeds and at least five or six farms which had been completely abandoned by their owners on account of wireworms. I saw several large farms in an excellent state of fertility where almost two-thirds of all crops would be a total loss this season. The majority of the infestations and the greatest damage appear to be in the lighter, sandier, types of soil; crops are almost completely destroyed.

All crops seemed to be attacked, although velvet beans appeared to have some degree of immunity. Farmers state that where land is heavily infested, the only means of relief is to fallow the land for at least two years. Mr. W. A. Thomas in 1910 and Mr. H. C. Egerton in 1914 worked on these wireworms for the State of South Carolina. They both state that humus, increasing the soil fertility, and lime showed much benefit. As previously stated, however, several fields were noted, very

rich in humus, and heavily fertilized, which were almost ruined by wireworms, and peanuts treated with landplaster were heavily damaged.

Nebraska

M. H. Swenk (July 15-August 1): Corn wireworms, Melanotus spp., continued some injury to replanted corn during the second half of July. One field in Holt County that was planted in May and destroyed by wireworms had the July replanting also destroyed. The species in this case was Melanotus pilosus. Injury to potatoes by wireworms was reported from Thayer County.

CORN LANTERN FLY (Peregrinus maidis Ashm.)

Mississippi

R. W. Harned (August 27): Injury to corn by the corn lantern fly Peregrinus maidis was reported from Big Point and Pascagoula on August 9.

A CENTIPEDE (Scutigera immaculata Newp.)

New York

M. N. Taylor (August 7): Abundant last year in Erie County, causing complete loss of the corn crop. This land was then treated with gas, and none could be found this year.

SCOTCH PEAS AND COWPEAS

W-MARKED CUTWORM (Agrotis unicolor Walk.)

Wisconsin

E. L. Chambers (August 15): A pest, reported as the armyworm was doing serious damage to crops in Manitowoc County, but upon investigation it was found to be the W-marked cutworm. It had completely defoliated some 40 acres of Scotch peas.

YELLOW WOOLLY BEAR (Diacrisia virginica Fab.)

Mississippi

R. W. Harned (August 27): Some larvae that were reported as causing considerable injury to cotton and cowpeas at Yazoo City on August 8 have been reared and identified by J. M. Langston as Diacrisia virginica.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina

W. A. Thomas (August 1): The cowpea curculio is unusually abundant in the fields at Chadbourn at this time and is seriously injuring cowpeas, which were planted early for table use. Many pods have been observed where every seed contained a weevil egg. The pods are not seriously injured until they are two-thirds grown or over. Every field of cowpeas so far examined has shown a more or less heavy infestation.

ALFALFA

GARDEN WEB WORM (Loxostege similalis Guen.)

ansas

J. W. McColloch (August 13): A farmer at Hazleton reports his alfalfa crop ruined by this insect.

ALFALFA CATERPILLAR (Eurymus eurytheme Boisd.)

ississippi

R. W. Harned (August 27): The alfalfa caterpillar was reported as very abundant in several alfalfa fields in Bolivar and Washington Counties early in August.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

ississippi

R. W. Harned (August 27): The three cornered alfalfa hopper, has been very abundant during the month of August in alfalfa fields in Bolivar, Washington, Sharkey, Yazoo, Oktibbeha, and Lee Counties.

CLOVER

BUMBLEBEES (Bombus spp.)

linois

W. P. Flint (August 21): Mr. J. H. Bigger reports bumblebees very scarce in clover fields in the western part of the State this season.

SOYBEANS

GREEN CLOVER WORM (Plathypena scabra Fab.)

ssissippi

R. W. Harned (August 27): Serious injury to soybeans by the green clover worm was reported by a correspondent at Rienzi, Alcorn County, on July 23. Some injury to alfalfa by this insect was reported from Bolivar and Washington Counties on August 9.

F R U I T I N S E C T S

APPLE APHID (Aphis pomi DeG.)

York

C. R. Crosby and assistants (August 7): Throughout the apple-growing sections of the State, both in the Lake Region and Hudson River Valley, this insect continued to be extremely scarce and of little economic importance. (Abstract J.A.H.)

ho

E. W. Mendenhall (August 14): The apple aphid is very bad on

apple stock in nurseries in southwestern Ohio and did considerable damage to the leaves.

ROSY APPLE APHID (Anuraphis roseus Baker)

New York

C. R. Crosby and assistants (August 7): Reports from all parts of the State indicate that this insect is subnormally abundant; occasional orchards in Monroe County, however, show considerable injury. (Abstract J. A. H.)

CODLING MOTH (Carpocapsa pomonella L.)

New York

C. R. Crosby and assistants (August 7): About the normal amount of sideworm injury is appearing in the main apple-growing sections of the State. (Abstract J. A. H.)

Georgia

E. Lee Worsham (August 27): Damage to apples is light as compared with last year.

Illinois

W. P. Flint (August 21): The late first-brood codling moths are now fairly numerous in orchards in the central part of the State. They are somewhat less numerous in the southern part of the State.

According to Mr. Chandler's breeding-cage records, third-brood larvae would begin hatching in the vicinity of Carbondale on August 25.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

New York

C. R. Crosby and assistants (August 7): Generally troublesome throughout the Hudson River Valley, in many cases causing considerable injury. In Orleans County it is believed that oil sprays will be necessary in many orchards. In Monroe County as high as 30 to 40 per cent of the picked fruit will be injured. (Abstract J. A. H.)

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Ohio

E. W. Mendenhall (August 13): The red-humped apple caterpillar is found in an orchard at Columbus and doing some damage.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Tennessee

A. C. Morgan (August 28): The apple tree tent caterpillar is absent this year.

CIGAR CASE BEARER (Coleophora fletcherella Fern.)

New York C. R. Crosby and assistants (August 7): Though very abundant in neglected orchards, this insect is not a commercial factor where spraying is practiced. (Abstract J. A. H.)

PISTOL CASE BEARER (Coleophora malivorella Riley)

New York C. R. Crosby and assistants (August 7): Though not so abundant as the cigar case bearer, this insect appears to be worse than usual in neglected orchards, particularly in the Hudson River Valley. (Abstract J. A. H.)

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

New York C. R. Crosby and assistants (August 7): From reports received from Dutchess County this insect seems to be less abundant than usual in the Hudson River Valley. In central New York, however, this pest is doing more damage than in many years. The damage, however, is confined to orchards in which an incomplete spray schedule is followed. In many cases all of the terminal twigs are defoliated and in some cases the trees are entirely defoliated. (Abstract J. A. H.)

Maine C. R. Phipps (August 27): The work of the second-generation larvae of this insect is very noticeable on apples on roadside trees and poorly sprayed orchards throughout the State. Last year Maine experienced her first outbreak and this season the attack is equally severe.

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

New York C. R. Crosby and assistants (August 7): Becoming increasingly troublesome and in some cases doing commercial damage, especially where spraying was neglected. Reported more abundant than usual from Orleans, Monroe, Niagara, Chautauqua, and Erie Counties. (Abstract J. A. H.)

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York C. R. Crosby and assistants (August 7): Though more abundant than last year in the lower Hudson River Valley, the apple maggot is not so abundant as it was in 1926. (Abstract J.A.H.)

HAG MOTH (Phobetrus pithecius S. & A.)

Connecticut W. E. Britton (August 24): Reported from Meriden on apple and from Hartford on pear.

GREEN FRUIT WORM (Graptolitha antennata Walk.)

New York C. R. Crosby and assistants (August 7): Generally scarce throughout the entire State. (Abstract J. A. H.).

FALL WEBWORM (Hyphantria cunea Drury)

Connecticut M. P. Zappe (August 22): Present over entire State but seems to be more abundant in northeastern and southeastern portions of State. Seems to be a little more plentiful compared with an average year.

New York C. R. Crosby and assistants (August 7): Very few observed in any part of the State. (Abstract J. A. H.)

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

New York C. R. Crosby and assistants (August 7): Though occasional but little damage throughout the greater part of the State, this insect has proved troublesome in several orchards in Orange County. (Abstract J. A. H.)

A BEETLE (Anomala minuta Burm.)

Georgia E. Lee Worsham (July 28): Anomala minuta Burm. is attacking ripening apples at Cornelia, and causing the apple growers considerable worry. The damage is quite similar to that by the Japanese beetle. (Identification by W. S. Fisher). (August 27): Has disappeared from the apple orchards in northern Georgia after feeding on the maturing fruit for about two weeks.

NEW YORK WEEVIL (Ithycerus noveboracensis Forst.)

New York Ray Bender (July 27): Fifty per cent of the young trees in a one-year-old planting on new ground in Dutchess County were injured by the beetles eating out holes where the new shoots start.

APPLE REDBUG (Lygidea mendax Reut.)

New York C. R. Crosby and assistants (August 7): Severe injury has been occasioned in some orchards in the Hudson River Valley. This insect was about normally abundant in central New York and doing practically no damage in the western part of the State. (Abstract J. A. H.)

APPLE LEAPHOPPER (Empoasca mali LeB.)

New York C. R. Crosby and assistants (August 7): Became very abundant late in July and continued abundant throughout the month in the

Hudson River Valley, but very little damage was reported from central New York. (Abstract J. A. H.)

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

C. R. Phipps (August 27): This represents the first serious outbreak of the European red mite in Maine. Some orchards were entirely bronzed in color by August 15.

Philip Garman (July): Generally scarce during July but reported as abundant in North Branford.

C. R. Crosby and assistants (August 7): Decidedly less abundant than last year and doing practically no commercial damage. (Abstract J. A. H.)

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

C. R. Crosby and assistants (August 7): This insect, is reported from practically all counties as being of no commercial importance in sprayed orchards. (Abstract J. A. H.)

W. P. Flint (August 21): As is to be expected, following the severe winter killing of the San Jose Scale, this insect is less abundant than usual, as reported by the nursery inspectors in the State this season.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

C. R. Crosby and assistants (August 7): This insect, though reported as occurring throughout all counties, is doing practically no damage in sprayed orchards. (Abstract J. A. H.)

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Philip Garman (July): Generally scarce and much less abundant than last year at this time. (August 24): Very much less abundant than during August, 1927. Little or no damage done to the pear crop this year in New Haven County. More abundant compared with last month.

C. R. Crosby and assistants (August 7): Much less abundant than in many years throughout all parts of the State. (Abstract J. A. H.)

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

C. R. Crosby and assistants (August 7): Of little or no importance throughout the entire State. (Abstract J. A. H.)

SINUATE PEAR TREE BORER (Agrilus sinuatus Oliv.)

New York

C. R. Crosby and assistants (August 7): Causing serious injury in parts of Dutchess and Orange Counties. (Abstract J.A.H.)

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York

C. R. Crosby and assistants (August 7): Though generally prevalent in the eastern part of the State, this insect did but little damage except in parts of Ulster County. (Abstract J.A.H.)

PEAR MIDGE (Contarinia pyrivora Riley)

New York

C. R. Crosby and assistants (August 7): This insect is proving very serious in the Hudson River Valley. Reports of severe damage have been received from Orange, Ulster, Dutchess, and Columbia Counties where as high as 50 per cent of the crop has been destroyed in some places. In western New York infestations are unimportant. (Abstract J. A. H.)

TARNISHED PLANT BUG (Lygus pratensis L.)

New York

C. R. Crosby and assistants (August 7): Did considerable damage to Seckel pears in Ulster County. (Abstract J. A. H.)

PEAR SLUG (Eriocampoides limacina Retz.)

New York

C. R. Crosby and assistants (August 7): Rather scarce, doing but little damage in the Hudson River Valley. More serious than in many years in central and western New York in Monroe and Niagara Counties. (Abstract J. A. H.)

QUINCE

QUINCE CURCULIO (Conotrachelus crataegi Walsh)

Connecticut

W. E. Britton (August 24): Fruits showed characteristic injuries caused by this insect at Branford.

New York

C. R. Crosby and assistants (August 7): Doing slight damage in parts of Dutchess and Ulster Counties. (Abstract J. A. H.)

PEACH

GREEN PEACH APHID (Myzus persicae Sulz.)

New York

C. R. Crosby and assistants (August 7): Generally scarce throughout the State. (Abstract J. A. H.)

PEACH BORER (Aegeria exitiosa Say)

New York C. R. Crosby and assistants (August 7): About normally abundant throughout the State. (Abstract J. A. H.)

Illinois W. P. Flint (August 21): Adults of the peach tree borer began emerging during the week of July 16. Emergence is continuing. It is apparently, according to Mr. Chandler's observations, lagging a little behind the emergence of last year.

LESSER PEACH BORER (Sesia pictipes G. & R.)

New York C. R. Crosby and assistants (August 7): Appears to be on the increase in north-central New York. (Abstract J. A. H.)

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut Philip Gannan (July 24): The second brood was conspicuous in tips during July. Fully as abundant as last year in East Wallingford, Southington, and Glastonbury, according to reports and observations. (August 24): Parasites apparently not abundant in Hartford and Middlesex Counties. The moth is fully as abundant as last year and seems to be increasing generally throughout the State.

New York C. R. Crosby and assistants (August 7): Only reported from Ulster County where it was occurring in small numbers. (Abstract J. A. H.)

Georgia E. Lee Worsham (August 27): This insect has done very serious damage to peaches in northern Georgia. There has been practically no twig infestation this year.

O. I. Snapp and H. S. Swingle (August 17): Twigs hardening off. No fresh work. Infestation in one orchard at Macon as heavy as last year, but as a rule the infestation is lighter in the Georgia Peach Belt now than it was a year ago.

Ohio E. W. Mendenhall (July 27): The outbreak of the oriental peach moth is quite bad in Greene County. Also find it quite bad on peach stock in the nurseries.

Illinois W. P. Flint (August 21): The oriental peach moth was first found in Illinois in December of 1927. This season it is causing considerable damage to peaches throughout the southern part of the State but more particularly in the extreme southern peach-growing sections in Pulaski and adjoining counties. It has been found, however, in many orchards as far north as Jackson and Williamson Counties. In some young orchards twig infestation ran as high as 80 to 85 per cent, and in a few orchards definite counts made by Mr. Chandler show an infestation of fruit running up to 25 or even 30 per cent.

OAK PLANT BUG (Lygus quercalba Knight)

Connecticut

Philip Garman (July 24): Observed in two different localities in New Haven, both near large oak trees from which the bugs were apparently coming. All fruits examined on trees were punctured, and worthless.

A TREE CRICKET (Oecanthus californicus Sauss.)

California

T. D. Urbahns (August 10): Tree crickets, Oecanthus sp., probably californicus, are migrating from prune orchards, where they have been breeding and probably feeding upon aphids or other forms of insect life. They attack the peaches by feeding and making small holes in the fruit just prior to ripening. While the actual amount of injury is not severe, the very strict grading enforced by the canners requires growers to throw out practically all of this fruit and many thousands of tons of fruit are being lost to the growers. This is the first experience growers have had in this district with the Oecanthus sp., although, to my knowledge, tree crickets destroyed approximately 125 tons of fruit in an orchard about 3 years ago.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

New York

C. R. Crosby and assistants (August 7): Generally prevalent throughout the State but only seriously abundant in the western part of the State, where infestations are reported as rather heavy in Niagara County, (Abstract J. A. H.)

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

O. I. Snapp (August 20): The general infestation in the Georgia Peach Belt has not yet started to show the usual annual increase. A dry, hot, late summer is usually conducive to scale increase. The season so far has been very rainy, with moderate temperatures.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

Georgia

O. I. Snapp (August 3): Very heavy infestation on peach trees in a home orchard at Macon.

COTTONY PEACH SCALE (Pulvinaria amygdali Ckll.)

New York

C. R. Crosby and assistants (August 7): Very scarce throughout the State. (Abstract J. A. H.)

CHERRY

CHERRY APHID (Myzus cerasi Fab.)

New York

C. R. Crosby and assistants (August 7): Generally subnormally

abundant throughout the State. (Abstract J.A.H.)

PEAR SLUG (Eriocampoides limacina Retz.)

Nebraska M. H. Swenk (July 15-August 1): Was unusually injurious on cherry trees in Scotts Bluff County during the period here covered.

CHERRY FRUIT FLIES (Rhagoletis spp.)

New York C. R. Crosby and assistants (August 7): These insects appear to have been more abundant than usual throughout the State, in many cases doing very considerable commercial damage. (Abstract J. A. H.)

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Georgia E. Lee Worsham (July 28): The apple curculio has been found on wild cherries. Determination made by W. S. Fisher.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Michigan R. H. Pettit (August 11): Has been seriously injuring several young cherry orchards in Oceana County and at Northport in Leelanau County. I have just returned from examining these orchards and found in one case that the attack had come from a dying peach orchard adjacent to the injured trees, and in the other case to a poorly kept apple orchard. In both cases there were enormous piles of brush right in or close by the cherry orchards, and this brush showed the workings of the beetle which is present in enormous numbers. The injury was caused by the beetles flying from the dying trees and brush piles and feeding in the axils of buds of the young cherry trees and thereby killing many of the twigs and branches.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut Philip Garman (July 24): Parasite Triaspis curculionis Fitch found parasitizing approximately 10 to 25 per cent of the curculio larvae, in New Haven County. Amount of injury about the same as last year.

New York C. R. Crosby and assistants (August 7): This insect was normally abundant in the Hudson River Valley and very serious in central and western New York. (Abstract J. A. H.)

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

New York

C. R. Crosby and assistants (August 7): Though troublesome in several plantings, this insect is decidedly less abundant than was the case last year. (Abstract J. A. H.)

AN APHID (Amphorophora rubi Kalt.)

New York

M. N. Taylor (August 7): Very abundant in Erie County on raspberry.

AN APHID (Aphis rubiphila Patch)

New York

M. N. Taylor (August 7): Less abundant than usual in Erie County, on raspberry.

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

New York

M. N. Taylor (August 7): In one planting 35 per cent of the tips are girdled. In general the injury is negligible in Erie County.

RASPBERRY SAWFLY (Monophadnoides rubi Harris)

New York

C. R. Crosby and assistants (August 7): Occasional outbreaks reported from Monroe, Chautauqua, and Erie Counties. (Abstract J. A. H.)

BLACKBERRY

BLACKBERRY LEAF MINER (Metallus rubi Forbes)

Georgia

O. I. Snapp (July 30): Infestation rather heavy this year at Fort Valley. Larvae are now nearly full grown.

GRAPE

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

New York

F. E. Gladwin (August 2): More abundant than usual. No commercial injury at Fredonia.

Connecticut

B. H. Walden (July 13): Grapevines and Virginia creepers nearly stripped in two sections of the city. More abundant compared with average year.

GRAPE PLUME MOTH (Oxyptilus periscelidactylus Fitch)

New York

C. R. Crosby and assistants (August 7): Reported as generally more abundant than usual in the Hudson River Valley but did

little commercial damage. (Abstract J. A. H.)

GRAPE ROOT WORM (Fidia viticida Walsh)

New York

C. R. Crosby and assistants (August 7): Apparently on the increase in western New York. (Abstract J. A. H.)

GRAPE COLASPIS (Colaspis brunnea Fab.)

Illinois

W. P. Flint (August 21): Mr. J. H. Bigger reports this insect fairly abundant in fields in west-central Illinois during the week of August 12.

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

New York

C. R. Crosby and assistants (August 7): Generally subnormally abundant throughout the State. (Abstract J. A. H.)

GRAPE BLOSSOM MIDGE (Contarinia johnsoni Sling.)

New York

C. R. Crosby and assistants (August 7): Present but not serious in central and western New York. (Abstract J. A. H.)

GRAPE LEAFHOPPER (Erythroneura comae Say)

New York

C. R. Crosby and assistants (August 7): The grape leafhopper is quite bad in the State and is doing considerable damage.

A WIREWORM (Monocrepidius lividus DeG.)

District of
Columbia

J. Gastra (August 21): A gentleman brought specimens into the office saying that they were injuring the fruit of grape at 511 K St., N. E.

CURRENT

CURRENT APHID (Myzus ribis L.)

New York

C. R. Crosby and assistants (August 7): Generally prevalent throughout the State but causing little damage. (Abstract J. A. H.)

IMPORTED CURRENT WORM (Pteronidea ribesii Scop.)

New York

C. R. Crosby and assistants (August 7): About normally abundant throughout the State, apparently on the increase in western counties. (Abstract J. A. H.)

PECAN

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia

T. L. Bissell (August 24): The midsummer brood of shuck worm larvae has done considerable injury to pecans at Barnes-

ville, particularly to those of the Schley variety. Nuts when attacked before the shell has begun to harden usually drop.

Florida

J. R. Watson (August 20): The shuck worm has been less injurious this year than last year.

PECAN NUT CASE BEARER (Acrobasis hebescella Hulst.)

Florida

J. R. Watson (August 20): The nut case bearer has been more injurious this year than last.

PECAN BUD MOTH (Proteopteryx holliana Stiles.)

North Carolina

W. A. Thomas (August 1): This insect seems to be doing considerable damage to young pecan trees in the vicinity of Chadbourn. Some trees have been observed where every bud is injured. In many instances supplementary buds have developed and these are now being attacked.

PECAN WEEVIL (Balaninus caryae Horn)

Georgia

T. L. Bissell (August 24): Balaninus caryae Horn has begun its activities in pecans in the vicinity of Barnesville. Adults have been collected at one locality on several dates since July 14 and an isolated orchard in another locality is severely infested, whereas the insect has barely made its appearance in the main orchards at Barnesville. All punctures to date have resulted in the dropping of the nuts. Apparently no eggs have yet been laid.

CITRUS

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida

J. R. Watson (August 20): The unusually large number of the citrus aphids, Aphis spiraeicola, noted in June greatly diminished during July, and the remnant was practically exterminated by the heavy rains which accompanied the passage of the hurricane across the peninsula during August.

BLUEBERRY

CHAIN-SPOTTED GEOMETER (Cingilia catenaria Drury)

Maine

C. R. Phipps (August 27): This looper which was present in very destructive numbers last season is again active (August 15) in blueberry fields in Hancock County but is not causing so much damage as in 1927.

TRUCK-CROP INSECTS

BLISTER BEETLES (Meloidae)

Mississippi

R. W. Harned (August 27): Blister beetles belonging to the species Epicauta lemniscata were reported as injuring tomato plants at Holly Springs, on August 17, and beetles belonging to the species E. marginata Fab. were found injuring pepper plants at Wiggins on August 20.

CHANGA (Scapteriscus vicinus Scudd.)

Florida

J. R. Watson (August 20): The West Indian mole cricket or changa, which is present in a considerable number of localities in the State, seems to be doing more damage than in previous years.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York

C. R. Crosby and assistants (August 7): This insect is about normally abundant in the eastern part of the State and causing considerable damage to potatoes in the extreme western counties. (Abstract J.A.H.)

Tennessee

A. C. Morgan (August 28): The Colorado potato beetle has not been injurious except in occasional potato patches.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

New York

C. R. Crosby and assistants (August 7): This insect is doing some damage throughout the State, but apparently is not abnormally abundant. (Abstract J. A. H.)

TOMATO WORM (Protoparce sexta Johan.)

New York

W. H. Freeman (August 15): The southern hornworm Phlegethontius sexta Johan. is common and destructive on tomatoes in the vicinity of Tottenville, S.I. Cocoons of the parasite Apanteles congregatus Say were noted on only one worm to date.

TOBACCO WORM (Protoparce quinquemaculata Haw.)

New York

W. H. Freeman (August 14): So far this season only one larva of the northern variety, Phlegethontius quinquemaculata, has been noted.

POTATO APHID (Illinoia solanifolia Ashm.)

New York

M. N. Taylor (August 7): One field of potatoes in Erie County was seriously injured by this insect.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- New York M. N. Taylor (August 7): This insect did considerable damage in early plantings of cabbage in Erie County.
- Illinois W. P. Flint (August 21): This pest of cabbage is extremely abundant throughout central and northern Illinois. Some recent examinations by Mr. Compton show as high as upwards of 400 eggs on a single cabbage plant in the vicinity of Chicago. A number of plants which were examined in a commercial field gave an average of 111 eggs per plant.
- Wisconsin E. L. Chambers (August 15): While cabbage and cauliflower were hard hit by this pest, unusually heavy losses of nasturtiums growing in the yards and gardens were reported generally over the southern part of the State.
- Alabama L. W. Brannon (August 16): The imported cabbage worm is causing considerable injury to cabbage in the vicinity of Birmingham.

CROSS-STRIPED CABBAGE WORM (Evergestis rimosalis Guen.)

- North Carolina W. A. Thomas (August 15): This insect is unusually abundant on collards in the home gardens in the Chadbourn section. Its attack seems to be confined to the tender buds of the plants, which are so completely destroyed that growth is stopped until supplementary buds are formed on the stalk near the injured area. These buds are usually formed after the larvae have stopped feeding.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

- New York C. R. Crosby and assistants (August 7): This insect is more serious than in many years in central and western New York, where the infestations in late cabbage seed-beds were very severe. (Abstract J.A.H.)

CABBAGE APHID (Brevicoryne brassicae L.)

- New York C. R. Crosby and assistants (August 7): This insect is reported subnormally abundant throughout the State. (Abstract J.A.H.)

HARLEQUIN BUG (Murgantia histrionica Hahn)

- Tennessee A. C. Morgan (August 28): The harlequin bug, which was so numerous last year, has not caused any complaints thus far this season.

Alabama L. W. Brannon (August 10): Adults of the harlequin bug are relatively scarce on collards and cabbage, but the nymphs are relatively abundant and are causing some injury. Adults and nymphs are not so abundant as they were this time last season and are not causing the damage that they were then.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comptana Frohl.)

New York C. R. Crosby and assistants (August 7): This insect is generally scarce throughout the State. (Abstract J. A. H.)

STRAWBERRY WEEVIL (Anthonomus signatus Say)

New York C. R. Crosby and assistants (August 7): Apparently not so abundant as usual in the Hudson River Valley, but doing considerable damage to ever-bearing varieties of strawberry in the western part of the State. (Abstract J.A.H.)

GRAPE MEALYBUG (Pseudococcus maritimus Ehrh.)

North Carolina W. A. Thomas (July 31): In some of the areas around Chad-bourn, where strawberries are dying, it has been observed that many of the plants are heavily infested with this insect. They occur principally on the upper root areas and just below the crown of the plant. The general appearance of an infested plant is very similar to that of one attacked by the strawberry root aphid and the injury to the individual plant seems to be just as severe.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New York M. N. Taylor (August 7): The Mexican bean beetle is more abundant this year than last in Erie County. The infestations are spotted.

Virginia Monthly Letter Bureau of Entomology, No. 171, July, 1928: N. F. Howard, Columbus, Ohio, visited Blacksburg, Lynchburg, Danville, Richmond, and other points in Virginia, July 16 and 18, in company with Prof. Schoene, of the experiment station at Blacksburg, and Mr. Moore, county agent, to determine the intensity of the infestation by the Mexican bean beetle, which had been reported to be seriously injuring beans in that section. Mr. Howard also visited Washington to arrange for experimental work on the Mexican bean beetle, to be conducted at the Arlington Farm in Virginia.

- North Carolina W. A. Thomas (August 15): Pole lima beans in the vicinity of Chadbourn are now being seriously injured by this insect. All summer snap beans are now over and the beetles have transferred to the limas in great numbers. This insect first appeared in the Chadbourn area during the past spring, where it was found in small numbers on early snap beans on just a few farms. At this time the infestation seems to be rather widespread, the insect occurring on nearly every farm in the territory.
- Tennessee A. C. Morgan (August 28): The Mexican bean beetle has done but very little damage and is just now showing up on late beans.
- Alabama L. W. Brannon (August 16): In most instances the second crop of beans in the Birmingham locality was completely destroyed by the Mexican bean beetle. Several patches under observation were plowed up before time for picking. Bean-beetle damage to the second crop of beans was much worse than was expected. On August 4 a patch of young beans under observation was very heavily infested with adult bean beetles and egg masses were numerous. Second-generation beetles began emerging in the life-history experiments on July 21 and shortly after that were found in the fields in large numbers.
- Mississippi R. W. Harned (August 27): Serious injury to garden beans by the Mexican bean beetle was reported on August 8 from Kendrick, and a few days later from Fulton and Smithville.

PEAS

PEA APHID (Illinoia pisi Kalt.)

- New York R. G. Palmer (August 7): There has been no commercial loss to peas in Orleans County.
- M. N. Taylor (August 7): This insect caused considerable injury to early plantings of peas in Erie County.

PEANUTS

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- Florida J. R. Watson (August 20): Peanuts in the Everglades section have been severely damaged by the bean leafhopper, Empoasca fabae.
- VELVET BEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)
- Florida J. R. Watson (August 20): In July the velvet bean caterpillar heavily infested peanuts in the Everglades. This is the first instance that has come to our attention of moths laying

their eggs on peanuts, although it has long been observed that peanuts will be attacked if they are in close proximity to a field of velvet beans which have been defoliated. This new development is probably due to the fact that there were practically no velvet beans available in the Everglades.

CUCUMBERS

ONION THRIPS (Thrips tabaci L.)

New York E. G. Palmer (August 7): This insect has been numerous enough to cause commercial loss to cucumbers in several plantings in Orleans County.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New York C. R. Crosby and assistants (August 7): This insect is undoubtedly less troublesome than usual throughout the State. (Abstract J. A. H.)

Nebraska M. H. Swenk (July 15-August 1): Complaints of injury to cucurbits by this insect continued to be received in about normal numbers during the period covered by this report.

SQUASH BUG (Anasa tristis DeG.)

Nebraska M. H. Swenk (July 15-August 1): Complaints of injury to cucurbits by the squash bug continued to be received in about normal numbers during the period covered by this report.

MELON APHID (Aphis gossypii Glov.)

Nebraska M. H. Swenk (July 15-August 1): Complaints of injury to cucurbits by this insect continued to be received in about the normal numbers during the period here reported.

PICKLE WORM (Diaphania nitidalis Stoll.)

Tennessee A. C. Morgan (August 28): Some complaints have been made of the ravages of the pickle worm on late cucumbers.

ONIONS

ONION MAGGOT (Hylemyia antiqua Meig.)

New York G. M. Salisbury (August 2): This insect is injurious to onions in one area at Cherry Creek, Chautauqua County.

M. N. Taylor (August 7): This insect is causing serious damage to onions in Erie County, as high as 40 per cent in some plantings.

SWISS CHARD

SPOTTED BEET WEBWORM (Hymenia perspectalis Hbn.)

Alabama

L. W. Brannon (August 16): The first spotted beet webworm larva of the season was found on Swiss chard at Birmingham on July 18. The larva was about half grown and died 24 hours after collection. On July 31 the first moth of the season was found on grass near Swiss chard. On August 2, 30 or 40 moths were seen when sweeping in a patch of weeds near the Swiss chard patch. Only a very few eggs and one or two larvae have been seen on Swiss chard and no damage of economic importance has been seen in the district.

BEET AND SPINACH

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

New York

M. N. Taylor (August 7): The midseason crops are heavily infested in Erie County, as high as 90 per cent loss having occurred.

PEPPER

GREEN PEACH APHID (Myzus persicae Sulz.)

California

J. C. Elmore (August 22): The aphids have been very numerous on peppers in this section (Orange County) during the latter part of July until the present. Control has been difficult because of cool weather and the prevalence of windy days. The average temperature for this period has been about 70° F., with a minimum of 49° and a maximum of 85°. Leaves and pods have begun to drop from the pepper plants where the heaviest infestations have not been controlled and in many fields the late settings have been retarded.

CARROTS

CARROT RUST FLY (Psila rosae Fab.)

New York

M. N. Taylor (August 7): This insect has caused 30 per cent injury to carrots in some fields in Erie County.

SWEET POTATOES

SWEET-POTATO WEEVIL (Cylas formicarius Fab.)

Alabama K. L. Cockerham (July 31): After shipping-shed inspections at Foley, Baldwin County, of around 75 cars of early sweet potatoes and a corresponding amount of inspections in fields where early potatoes have been harvested, no sweet-potato weevils have thus far been found this year. This is especially encouraging since all these potatoes have been dug and shipped from an area previously very heavily infested.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Mississippi K. L. Cockerham (August 23): These beetles are usually very abundant on the Mississippi coast during the summer and early fall, attacking various crops and especially sweet potatoes, but this year they occur in fewer numbers than for several seasons around Biloxi. Now one finds an occasional adult where last year hundreds occurred.

A WIREWORM (Heteroderes laurentii Guer.)

Alabama K. L. Cockerham (July 31): This insect is reported as being less injurious to sweet potatoes this year than it was last season near Foley. Shipping-shed inspections of from 75 to 100 carloads of sweet potatoes have substantiated this fact. It has been noted that the damage is worse on Porto Rico or red-skin potatoes than on Triumphs or white potatoes. I can not say whether or not this is a specific variety preference or whether it is due to the fact that these potatoes were planted on infested soil.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOBACCO HORNWORMS (Protoparce spp.)

Tennessee A. C. Morgan (August 28): The tobacco hornworms have been scarcer than at any time during the 21 years of my residence in Tennessee. Almost no poisoning has been necessary.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Tennessee A. C. Morgan (August 28): The tobacco flea beetle has been less numerous than usual throughout the year.

GREEN JUNE BEETLE (Cotinis nitida L.)

Tennessee

A. C. Morgan (August 28): In a tobacco field of 45 acres the first and second stands of plants were almost completely ruined by the green June beetle larvae. This was the most severe infestation of this species that has come to our attention.

F O R E S T A N D S H A D E - T R E E I N S E C T S

PERIODICAL CICADA (Tibicina septendecim L.)

Connecticut

W. E. Britton (July 24): All adults had disappeared from New Haven, Hartford, and Middlesex Counties by July 15. In some places the ground is covered with wings where the bodies had been eaten by birds. Farmers note that crows do not pull corn in a year when 17-year locusts are abundant. These insects were somewhat less abundant than in 1911.

New Jersey

Miss M. G. Norton (August 4): Specimens of pupal skins were sent in from Princeton for determination. (Identified by J. A. Hyslop.)

A DOG DAY CICADA (Tibicina sayi S. & G.)

Illinois

W. P. Flint (August 21): The dog-day cicada is more abundant than usual in the vicinity of Champaign this season.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (August 7): The bagworm is beginning to show up again in central and southern Ohio. I also find some outbreaks in nurseries.

Mississippi

R. W. Harned (August 27): Bagworms have been very abundant during the past few weeks. Specimens collected on cedar at Columbus, on arborvitae at Holly Springs, and Cleveland, on evergreen at Tunica, and on Italia cypress at Jackson, (Identification by J. M. Langston.)

LEOPARD MOTH (Zeuzera pyrina L.)

Connecticut

B. H. Walden (July 24): During a storm with high wind on July 23 at New Haven many branches were broken from street trees (elms and maples). The breaks in many cases were where the branch was injured by the leopard moth several years previously. An examination of considerable material showed but little recent or fresh work.

WHITE-MARKED TUSSOCK MOTH (Homocampa leucostigma S. & A.)

Maine

C. R. Phipps (August 27): The egg masses are now quite conspicuous (August 25) in Bangor and elsewhere, the first outbreak in a number of years. Attacking elm, apple, etc.

New York

C. R. Crosby and assistants (August 7): Subnormally abundant throughout the State. (Abstract J. A. H.)

RED SPIDER (Tetranychus telarius L.)

Ohio

E. W. Mendenhall (August 11): The red spider, Tetranychus bimaculatus Harvey, is very bad on willow, honey locust, and elm leaves and is causing them to turn brown and die in East Columbus.

ASH

BANDED ASH BORER (Neoclytus caprea Say)

Nebraska

M. H. Swenk (July 15-August 1): This insect has been frequently reported as attacking ash during the last two weeks.

BEECH

TWO-LINED PROMINENT (Homocampa bilineata Pack.)

Michigan

R. H. Pettit (August 11): I have just returned from a trip to ~~Cceana~~ Cecana County, during which I found that about 800 acres of full-grown beech timber had been practically defoliated by Seirondonta bilineata. The larvae are now descending and cover the trunks of many trees rather thickly and lie at the bases of these trees by the quart. The larvae at this period are full-grown and many of them are starving while others seem to be suffering from disease.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Boisd.)

Mississippi

R. W. Harned (August 27): Specimens of the catalpa sphinx were reported recently as completely defoliating catalpa trees at Greenville and Durant.

COTTONWOOD

COTTONWOOD BORER (Plectrodera scalator Fab.)

Nebraska

M. H. Swenk (July 15-August 1): This insect has been frequently reported attacking cottonwood during the last two weeks.

ELM

ELM BORER (Saperda tridentata Oliv.)

Ohio

E. W. Mendenhall (August 10): I find an outbreak of the elm borer at Dayton on American elms and some damage is being done.

Nebraska

M. H. Swenk (July 15-August 1): This insect has been frequently reported attacking elms during the period covered by this report.

ELM COCKSCOMB GALL (Ceclopha ulmicola Fitch)

Illinois

W. P. Flint (August 21): The cockscomb gall of elm is being received in a little more than normal numbers.

HACKBERRY

HACKBERRY NIPPLE GALL (Pachypsylla celtidis-manne Riley)

Nebraska

M. H. Swenk (July 15-August 1): During the third week in July we began to receive complaints of unusual infestation of hackberry trees with the hackberry nipple gall. These reports were sent in from Colfax, Hall, and Buffalo Counties.

HICKORY

HICKORY TWIG BORER (Chramesus hicoriae Lec.)

Ohio

E. W. Mendenhall (August 2): I find an outbreak of the hickory twig borer at Linworth, Franklin County. The dead twigs are quite conspicuous.

LARCH

LARCH SAWFLY (Nematus erichsonii Hartig)

Connecticut

R. B. Friend (August 24): A plantation of European larch was partly stripped by Lygaeonematus erichsonii at Middleburg this year. Larvae are now in cocoons in the ground.

Wisconsin E. L. Chambers (August 16): Large tracts of white pine in the vicinity of Fond du Lac northeastern part of the State, were attacked by this fly.

LOCUST

LOCUST LEAF MINER (Chalcopus dorsalis Thunb.)

Pennsylvania J. A. Hyslop (August 14): These insects were causing the locust trees between Williamsport and Harrisburg to appear brown from a short distance.

Ohio E. W. Mendenhall (August 7): The locust trees in central and southern Ohio are badly affected by the locust hispid.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Connecticut W. E. Britton (July 24): This insect is seemingly more abundant this year than usual, having been reported from Hartford, West Haven, East Hartford, and Stamford. It was attacking elm at East Hartford and Silver maple at Stamford July 23; young scales were crawling.

OAK

OAK TWIG PRUNER (Hypermerallus villosus Fab.)

Connecticut W. E. Britton (August 24): This insect has been reported from Mystic, Watertown, Harden, and New Haven attacking oak in about the usual abundance.

PINE

INTRODUCED PINE SAWFLY (Diprion simile Hartig)

Connecticut W. E. Britton (August 24): Specimens received and the insect reported from a number of places in and around New Haven, attacking pine.

A SAWFLY (Neodiprion excitans Roh.)

Mississippi R. W. Kernal (August 27): Sawflies that have been tentatively identified as Neodiprion excitans were received from Brookhaven on August 18, with the report that they were injuring young pine trees in that vicinity.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut

M. P. Zappe (July 24): Work of this insect is seen in nurseries and it appears to be quite abundant, more being noted than ever before on pines at Stanford and Hamden.

POPLARS

POPLAR BORER (Saperda calcarata Say)

Nebraska

M. H. Gwink (July 15-August 1): This insect has been frequently reported attacking poplars during the last two weeks.

SPRUCE

SPRUCE MITE (Paratetranychus uniunguis Jacobi)

Connecticut

W. E. Britton (August 24): This pest is apparently on the increase, as it has been reported from Clinton, Pomfret, Greenwich, Wallingford, Stratford, Mid Leton, Cheshire, Manchester, New Canaan, Norwalk, Ridgefield, Fairfield, Woodmount, and East Hartford.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Tennessee

A. C. Morgan (August 28): The walnut datana which defoliated nearly all of the walnut trees in the Clarksville section last year has not been observed this year except in rare instances.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Connecticut

W. E. Britton (July 24): This imported insect has now spread all over Connecticut, having been reported recently on willow at Colebrook and West Haven.

M. P. Zappe (August 22): This insect has spread from the southwestern corner of the State to the Rhode Island line in the southern part of the State and to Thompsonville in the northern part. It is more plentiful in New London and Hartford Counties, completely defoliating willows.

INSECTS AFFECTING GREENHOUSE AND
ORNAMENTAL PLANTS AND LAWNS

(Aphididae)

Tennessee

A. J. Morgan (August 28): The usual heavy infestation of plant lice on roses and other ornamentals is lacking this season.

NEGRO BUG (Thyreocoris pulicarius Germ.)

Wisconsin

E. L. Chambers (August 8): Several complaints were received from Dane and Jefferson Counties to the effect that coreopsis, cosmos, and other annuals were so severely attacked as to completely wilt down before they were discovered. In some instances plants were completely destroyed by this pest, which is unusual for this locality.

BLACK STINK BUG (Cosmopepla bimaculata Thos.)

New York

G. H. Griswold (July 27): This insect has been noted in a heavy infestation in a flower garden at Altamont, Albany County, attacking the seed pods of snapdragon and columbine.

SEMITROPICAL ARMYWORM (Prodenia eridania Cram.)

Florida

J. R. Watson (August 20): One of the outstanding entomological events of July and August in Florida was a heavy outbreak of the semitropical armyworm, covering practically the entire peninsula. It defoliated practically all of the amaranth in places, and in the Everglades the closely related water hemp. In addition to coffee weeds and other weeds, it defoliated castor beans and many other ornamentals, and in places did considerable injury to grasses, but in most sections of the State other cultivated crops were not much injured. This is the largest outbreak that has occurred since 1917.

A RED SPIDER (Tetranychus sp.)

Iowa

C. N. Ainslie (August 16): More damage from red spiders has been observed in this vicinity, Sioux City, than for many years past. A large commercial flower garden has been nearly ruined, the pests appearing first on delphinium, then spreading to dahlias, gladioli, and other flowers. A long continued hot and dry interval seems to have favored their multiplication. They are numerous on fruit and shade trees and doing injury to foliage.

Mississippi

R. W. Harned (August 27): Red spiders have been very abund-

ant during the summer in all parts of the State, especially on ornamental plants of various kinds. Injury to shade trees and cotton has also been reported from a few localities.

DOGWOOD.

A SAWFLY (Macremphytus sp.)

Maryland

J. A. Hyslop (August 23): Full-grown larvae of this insect are rapidly defoliating Cornus stolonifera near Silver Spring.

RHODODENDRON

RHODODENDRON LACEBUG (Stephanitis rhododendri Horv.)

Connecticut

W. E. Britton (August 24): Leptobyrsa rhododendri Horv. occurs throughout the State and is apparently increasing, as it has been reported from Wilton, Norwalk, Darien, New Canaan, Stamford, Greenwich, Wallingford, Manchester, Pomfret, Cromwell, Enfield, East Hartford, Norwich, Waterford, Rockfall, Woodmont, and Mystic. It was attacking rhododendron and kalmia.

I N S E C T S A T T A C K I N G M A N A N D
D O M E S T I C A N I M A L S

MAN

FLEAS (Ctenocephalus spp.)

Wisconsin

E. L. Chambers (August 14): Six complaints have been received during the past week concerning cat and dog fleas which were a nuisance in homes and yards where pets were kept.

CHIGGER (Trombicula irritans Riley)

Wisconsin

E. L. Chambers (August 15): Several severe cases of infestation from chiggers have been brought to the attention of this office, two of which have been of several weeks duration and did not yield to sulphur and salt bath treatment.

OAT THRIPS (Anaphothrips stiratus Ort.)

Pennsylvania

F. C. Bishopp (July 23): Annoyance from the oat thrips at Allentown was reported by the Thermolator Corporation.

BUDBUG (Cimex lectularis L.)

Maryland and
Virginia

F. C. Bishopp (August): Bedbug infestations of chicken houses have been reported from Maryland and Virginia.

HOUSE FLY (Musca domestica L.)

General

F. C. Bishopp (August): House flies have been rather more abundant and annoying in Maryland, Virginia, and New York, than usual.

AMERICAN DOG TICK (Dermacentor variabilis Say)

Maryland

F. C. Bishopp (July): Several reports have been received of dog tick annoyance to man and animals, especially in the Chesapeake Bay Region.

CRINKLED FLANNEL MOTH (Lagoa crispata Pack.)

Mississippi

R. W. Harned (August 13): Several complaints have reached the State Plant Board office during the past few days that children have been severely stung by some odd-looking worms. The worms vary in size from 1/2 to 1 inch long, are covered with soft brown hair, and have a ridge along the back giving the worm the shape of a house-top. The Plant Board says that this is the larval stage of the crinkled flannel moth, and is most abundant in late summer and fall. Sharp poisonous spines under the soft brown hair make it very dangerous, and in some cases, physicians have been called to treat the people. A case is known where a finger was stiffened for several years by the sting of this insect.

CATTLE

TROPICAL CATTLE TICK (Margaropus annulatus australis Fuller)

strict of
lumbia

F. C. Bishopp (August 25): On request from the Washington office, Mr. E. C. Cushing collected specimens of ticks (nymphs and adults) from dairy cows in this vicinity. This species was reported by the writer from Key West, Fla., in 1913. The present evidence indicates that the species is spreading northward and its presence may add seriously to the difficulty of eradication since this variety has much less restricted host relations than our common form.

A SAND FLY (Culicoides furens Poey.)

orida

F. C. Bishopp (July and August): Several reports of severe annoyance from sand flies have been received.

A PODURID (Podura aquatica L.)

Nebraska

M. H. Swenk (July 15-August 1): In Lincoln County a well heavily infested with the springtail, Podura aquatica, so that the water in the horse tank and also the drinking water for the house is more or less contaminated with these insects, was reported late in July.

HOUSEHOLD AND STORED -

PRODUCTS INSECTS

TERMITES (Reticulitermes spp.)

Kansas

J. W. McCollock (August 12): Termite injury to woodworm in a dwelling at Pratt was reported August 10, and two houses at Manhattan were found infested August 12.

Nebraska

M. H. Swenk (July 15-August 1): A report of injury by our common termite, Reticulitermes tibialis Banks., in a flower garden was received from Douglas County July 20, and the infestation of a house^{at} Holdrege, Phelps County, was reported on July 31.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon

R. L. Ringer (July 20): I wish to advise you of the activities of the European earwig, which has become a dreadful pest on the Pacific Coast. It has been found in shipments of orange, tomatoes, and lettuce from California, so undoubtedly it will soon be spread all over the United States. It seems to have gained a foothold on this coast less than 10 years ago and now spreads from California into British Columbia.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

R. W. Harned (August 27): Probably no species of ant, except the Argentine ant, surpasses the fire ant as a general pest in this State. We receive dozens of complaints every year in regard to its depredations. As an example of the ant's destructiveness, we should like to quote a letter from Mr. L.J. Goodgame, one of our field inspectors, who writes as follows: "The fire ants are ruining the town. I can show you house after house where ladies will show you all kinds of clothes that have been ruined by the ants. In several places I have seen expensive dresses that have been bitten full of small holes. The women have proved to me that the ants attack clean clothes as well as soiled ones. These ants are also ruining upholstery in furniture, and even attack people while they are sitting in chairs."

During the Mississippi flood the city of Greenville was under

many feet of water. After the flood only a few colonies of the Argentine ant could be found, but strange to say, the flood did not apparently affect the fire ant for they are extremely numerous there now and by far the predominant species. While scouting in Greenville Mr. Goodgame encountered some of the little parasitic phorid flies which were attacking the fire ant. Specimens were submitted to Mr. J. R. Malloch who determined the flies as Plastophora crawfordi. Fire ants and tiny black ants were found to be abundant, and especially troublesome in some of the houses at Shaw.

ARGENTINE ANT (Iridomyrmex humilis Mayr.)

Mississippi

R. W. Horned (August 27): Infestations of the Argentine ant have been found recently at Holly Bluff, and Longview for the first time. Mr. Chesley Hines also found an infestation at Canton, which was caused by a lady removing shrubs and other ornamental plants from an infested area in that town to a non-infested area. Recent investigations at Shaw indicate that the ant has apparently been completely eradicated from that town.

ANTS (Formicidae)

Mississippi

R. W. Horned (August 27): The odorous house ant, Tapinoma sessile Say, appears to be rather sporadically distributed throughout the State. At Grenada, Greenwood, Columbus, and many other towns it has commonly been found infesting a number of houses on the same block or on adjoining blocks, thus resembling the Argentine ant in its general habits. It also resembles this species so much in appearance that one can easily mistake it for the Argentine ant. The ant most commonly nests out of doors in the surface soil just beneath leaves, boards or other debris. A correspondent at Lyman sent specimens of Dorymyrmex pyramicus flavus Perg. for identification with the report that they were giving trouble in the homes of several farmers living in that vicinity. This species, so far as our observation goes, does not appear to be troublesome to housekeepers living in towns.

CIGARETTE BEETLE (Lasioderma serricornis Fab.)

Nebraska

M. H. Swenk (July 15-August 1): One case of infestation of a mohair suite of furniture with the cigarette beetle was reported from Jefferson County in the middle of July.

CARPET BEETLE (Anthrenus scrophulariae L.)

Nebraska

M. H. Swenk (July 15-August 1): The present season an unusual number of complaints about this pest have been received.

THE INSECT PEST SURVEY BULLETIN

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INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1928.

Grasshoppers are numerous enough in Kansas and Montana to threaten seriously the new seeding of winter wheat.

The Hessian-fly situation in Kansas is not very encouraging. Volunteer wheat is very rank and there are indications that a considerable part of the crop will be planted before the fly-free date.

Scouting being carried on by the European corn borer control unit indicated that up to September 15 the one generation infestation of the borer had advanced about one tier of counties southwestward in Indiana and northwestward in Michigan; southward about one tier of counties in Ohio and southeastward about the same distance in Pennsylvania, crossing the northern third of New Jersey. It has extended northward and eastward into the Connecticut River Valley in Massachusetts and to cover the westernmost tier of counties in Vermont, and has crossed the southern part of the State into New Hampshire. It has also been reported from Marshall County, West Virginia.

A very severe outbreak of the fall armyworm occurred in Haiti late in August.

In the central portion of the infested area, the Japanese beetle seems to be somewhat less prevalent than during the past four or five years. *

The plum curculio was so unusually abundant this year in the Fort Valley section of Georgia that attempts are being made to control it even after the crop has been harvested.

A new blueberry pest, Frankliniella vaccinii Morg., is reported as doing rather severe damage in parts of Maine.

During the past season very considerable loss was occasioned by the pecan nut case bearer in parts of Texas.

The onion thrips seems to be more abundant in the Connecticut River Valley in Connecticut than last year.

*Recent scouting located beetles at New London, Connecticut, Sayre, Pennsylvania, and Frederick and Hagerstown, Maryland.

The bean leaf roller is reported as seriously attacking beans in parts of North Carolina and Florida.

The Bertha armyworm appeared late in August in the northwestern corner of Montana, seriously injuring sugar beets.

During the past summer the sweet-potato leaf beetle was reported for the first time from Maryland.

The sugarcane borer is very decidedly less abundant in the cane fields of Louisiana than it was this time last year, the average for all fields this year being 7.6 per cent as compared with an average of 79.1 per cent in 1927.

The satin moth appears to be increasing in Rhode Island.

Owing to wet weather, much of the wheat in Kansas went into storage in damp condition, which has resulted in very serious losses caused by stored-grain insects.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Missouri L. Haseman (September 26): Melanoplus femur-rubrum DeG. and M. differentialis Thom. have continued to be abundant during September and have done considerable damage to late corn and to young orchards.

Kansas J. W. McColloch (September 21): Grasshoppers, Melanoplus atlantis Riley, are abundant throughout much of the State. At present they are causing considerable damage to fall-sown alfalfa and undoubtedly will be injurious to wheat when it comes up.

Montana W. B. Mabey (August 23): Grasshoppers are not abundant enough to do serious damage to this year's crop, but will probably necessitate some poisoning operations on this year's seeding of winter wheat, especially in eastern Montana.

MORMON CRICKET (Anabrus simplex Hald.)

Montana W. B. Mabey (August 23): The Mormon cricket, owing to poisoning operations and the work of the two parasites, has practically disappeared. After an extended search through its breeding grounds none could be found. Both parasites, however, were abundant.

WIREWORMS (Elateridae)

Indiana J. J. Davis (August 30): Wireworms were reported damaging potatoes at Indianapolis August 5.

North Carolina J. N. Tenhet (August): Adult elaterids of the genus Monocrepidius have been very numerous this summer. M. vespertinus Fab. M. bellus Say, and M. lividus DeG. have been taken very freely.

JAPANESE BEETLE (Popillia japonica Newm.)

General Monthly letter Bureau of Entomology, No. 172, August, 1928: The colony of the Japanese wasp, Tiphia popilliavora Rohwer, established near Riverton, N. J., has more than maintained its vigorous condition. During August sufficient adults were present to permit the release of 18 additional colonies. A total of 28 subcolonies in all have been released from the parent colony. A recent check-up of the points where colonies of this insect were set free in 1927 revealed the fact that the 10 subcolonies were well established. Centeter cinerea Aldrich, the introduced tachinid parasite of the adult Japanese beetle, were released in large numbers during July and August at Bridgeport, Conn., Harrisburg, Pa., and Nobile, Pa. Following the

release of the flies, many beetles were recovered upon which eggs had been deposited.

Conditions in the central portion of the area heavily infested by the Japanese beetle indicate a slight reduction in the population of the beetle, as compared with conditions during the last four or five years.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Missouri

L. Haseman (September 26): Inquiries are being received from farmers regarding the fly-free date for different sections of the State, but no sign of any serious infestation of fly has been reported.

Kansas

J. W. McColloch (September 21): Present indications are that the Hessian fly is still a problem with us, and we anticipate some damage this fall. Apparently the area of infestation involves central Kansas. Owing to abundant rainfall, there has been a heavy growth of volunteer wheat, and we find maggots present in this. Because of the rank growth of volunteer wheat in some sections, the farmers are planning on letting this stand for pasture and possible crop. There is also going to be quite a bit of wheat planted before the safe-sowing date.

CORN

STALK BORER (Papaipema nebris nitela Guen.)

Maryland

E. N. Cory (August 16): We have received reports of damage to corn, dahlias, and lilies during the summer. Reports coming from Hagerstown, Mt. Airy, Waterbury, Street, Upper Marlboro, Cumberland, Baltimore, Harpers Ferry, and Bethesda.

Indiana

J. J. Davis (August 30): The stalk borer has been reported from the following localities during the past month: Monon, Remington, Plymouth, Owensville, Clinton, Tipton, Aurora, Petersburg, Albany, Peru, Jeffersonville, Fowler, Madison, Worthington, Heltonville, Frankford, Williamsport, and Cynthiana. In a few cases flowers such as dahlia, zinnia, and strawflower have been attacked, also pop corn, sweet corn, and tomato, but in the majority of cases, the host was field corn. They so severely infested the matured corn stalks in some cases that corn broke over.

Nebraska

M. H. Spenk (August 1-September 1): The stalk borer con-

tinued to be reported, but with diminished frequency during the month of August, especially from the counties in Nebraska lying north of the Platte River.

Missouri

L. Haseman (September 26): Some complaints of the stalk borer have been received during the month.

Kansas

J. W. McColloch (September 20): Corn stalks have been received from Maple Hill and Manhattan containing pupae of this insect. The moths are now emerging in the field.

CORN EAR WORM (Heliothis obsoleta Fab.)

South Carolina

Franklin Sherman (July-August): The boll worm has been reported more frequently than usual from all sections, the larvae has been very abundant in corn, while it has been less prevalent, though common, in tomatoes.

Ohio

E. W. Mendenhall (September 25): The tomato fruit worm is quite bad in Montgomery County this year, attacking tomatoes.

Missouri

L. Haseman (September 26): This pest has been unusually scarce in central Missouri during the summer, but it is attracting some attention on late corn.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

General

L. H. Worthley (September 15): Parts of the following counties are included in the areas found infested by the European corn borer this far this season: Hartford, Middlesex, New London, and Windham in Connecticut; Delaware, Grant, Huntington, Jay, Kosciusko, LaPorte, Randolph, St. Joseph, and Wells in Indiana; Berkshire, Franklin, Hampden, and Hampshire, in Massachusetts; Allegan, Cass, Clare, Gladwin, Gratiot, Ionia, Isabella, Kalamazoo, Kent, Mackinac, Midland, Montcalm, and St. Joseph in Michigan; Grafton in New Hampshire; Bergen, Middlesex, Morris, and Warren in New Jersey; Belmont, Clark, Darke, Fairfield, Fayette, Greene, Miami, Muskingum, and Pickaway in Ohio; Carbon, Greene, Mifflin, Monroe, Northampton, Pike, and Wayne in Pennsylvania; Addison, Bennington, Chittenden, Franklin, Grand Isle, Lamoille, Rutland, and Windham in Vermont; and Marshall in West Virginia.

Rhode Island

A. E. Stene (September 21): The corn borer is doing more damage than it has in the past years and is showing up in new places from which it had not hitherto been reported.

SADDLE-BACK CATERPILLAR (Sibine stimulea Clem.)

Indiana

J. J. Davis (August 30): The saddle-back caterpillar was

reported on corn at Franklin August 17 and Aurora August 28.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

Maryland

E. N. Cory (August 1): This insect is more abundant than for many years for the agitation over the European corn borer has made correspondents more observant. Reports have come from Easton, Upper Marlboro, and Berlin of attacks on corn.

Kansas

J. W. McColloch (September 8): Corn was received from Girard containing larvae of this insect.

CHINCH BUG (Blissus leucopterus Say)

Missouri

L. Haseman (September 26): The chinch-bug situation this fall is more favorable than for the past few seasons, as practically no complaints of infestation have come to this office during the summer.

Nebraska

M. H. Swenk (August 1-September 1): The only place in Nebraska where chinch bugs have been numerous enough in 1928 to attract attention has been in northwestern Dodge County, where during the latter part of August they were plentifully present in some of the cornfields.

CORN LANTERN FLY (Peregrinus maidis Ashm.)

North Carolina

B. B. Fulton (September 12): A small field of corn at Wilmington was severely infested, every leaf sheath, especially near the base of the stalk, harbored hundreds of nymphs.

W. A. Thomas (September 4): This insect has just begun to infest late corn in the vicinity of Chadbourne. Large numbers of Diptera and a few Hymenoptera are attracted to the infested plants by the exuding plant juice from the injured areas.

CORN ROOT WORM (Diabrotica longicornis Say)

Missouri

L. Haseman (September 26): Specimens of the adult beetles of the western corn root worm have been received from several points in the State and they are present at Columbia in greater numbers than I have ever seen them before.

TILE-HORNED PRIONUS (Prionus imbricornis L.)

Kansas

J. W. McColloch (September 8): A 40-acre field of corn on sod land at Girard has been injured by the grubs of this species.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)

Utah

G. F. Knowlton (September 26): The pea aphid, Acyrtosiphora pisi Kalt., has been very abundant in the alfalfa seed raising areas of Beaver and Millard Counties during the past season. This aphid occurs throughout the alfalfa-growing area of Utah, and is usually present throughout the summer in moderate abundance.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

South Carolina

W. A. Thomas (August 24): Growers in the vicinities of Florence, Lynchburg, and Sumter report such large numbers of cowpea pod weevil larvae in green cowpeas as to render them unfit for food in the home.

LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

North Carolina

W. A. Thomas (August 31): An extremely heavy infestation of this insect, in both adult and nymphal stages, has recently developed on the green pods of cowpeas in the vicinity of Chadbourn. The injury is much more severe to the immature pods, which seem to dry out very rapidly and die following the attack.

COWPEA WEEVIL (Mylabris chinensis L.)

North Carolina

W. A. Thomas (September 4): This insect is now ovipositing heavily on green cowpeas in the fields about Chadbourn. Frequently two eggs were found on a single pod.

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

Missouri

L. Haseman (September 26): One serious outbreak of the sorghum worm was reported from Dexter, during September. The epidemic has resulted in the almost complete defoliation of the grain in several fields of grain sorghum and related crops.

GRASS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Haiti

R. C. Smith (August 27): This last month we have had an

outbreak of the old fall armyworm or grass worm around Port-Au-Prince. I saw bent grass entirely defoliated by these larvae. They were very numerous in isolated or scattered localities and the parasitism was very low.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Ohio

E. W. Mendenhall (September 25): I find a variety of grass Eragrostis major or strong scented Lose grass infested with the woolly apple aphid in Montgomery County, especially in the vicinity of Dayton.

F R U I T I N S E C T S

APPLE APHID (Aphis pomi DeG.)

Montana

W. B. Mabey (August 23): The green apple aphid has been unusually abundant on apple in the Bitter Root Valley.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Rhode Island

A. E. Stone (September 21): The apple maggot is worrying the fruit growers, but apparently is not much more numerous than in previous years.

HAG MOTH (Phobetrus nithecium S. & A.)

Connecticut

W. E. Britton (September 24): Reported on pear and apple from Hartford, Meriden and Shelton.

CODLING MOTH (Carpocapsa pomonella L.).

Indiana and
Kentucky

B. A. Porter (September 24): In the Vincennes section of Indiana the infestations have continued moderate, and very few third-brood worms have appeared. Near Henderson, Ky., seventy miles south, considerable numbers of third-brood worms have appeared and are causing serious losses.

Missouri

L. Haseman (September 26): As reported earlier, the codling moth in the Ozark section of Missouri emerged irregularly in the spring and in spite of careful spraying of orchards much wormy fruit resulted. During the early part of September a heavy epidemic of pin worms was present at Marionville. In central Missouri during the latter part of September pin worms of the partial third brood were fairly common, though the fruit in central Missouri is freer from apple worm infestation than for the three years past. In northwestern Missouri in the properly sprayed orchards very few wormy apples were found during the early part of September, though a sprinkle of pin worms also showed up.

APPLE LEAFHOPPER (Empoasca mali LeB.)

Missouri

L. Haseman (September 26): During the middle of September the orchards in central Missouri were literally alive with the small green apple leafhopper.

Montana

W. B. Mabey (August 23): Leafhoppers have been unusually abundant in the Bitter Root Valley, and the damage is likely to cause a considerable loss to apple growers, as many of the apples can not be marketed in the fancy grade.

SCURFY SCALE (Chionaspis funfura Fitch)

Ohio

E. W. Mendenhall (September 7): The scurfy scale is very bad in some of the orchards at New Paris, and has even gotten into the nurseries, making the apple stock unsalable.

QUINCE

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Indiana

J. J. Davis (August 30): Yellow-necked apple caterpillar was reported eating quince foliage at Franklin August 18.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Georgia

O. I. Snapp (September 21): The emergence of adults is taking place later than normal this year.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

Philip Garman (September 23): In the central part of the State this insect is reported attacking peach. Not over 12 per cent of parasitism in heavily infested localities.

Georgia

O. I. Snapp and H. S. Swingle (September 21): At least one larva was found in each fruit examined in an orchard of October peaches in Crawford County. These peaches furnished a host for the late broods. There are only several small orchards of October peaches in this section of the Georgia Peach Belt. The lack of a host for the late brood of this insect in most sections of the peach belt keeps it from being of much economic importance.

E. Lee Worsham (September 26): There is normal injury to peach twigs and considerable damage to the fruit of apple, as much as 25 per cent infestation in the Arkansas black variety. This applies to northern Georgia.

South Carolina Franklin Sherman (July-Aug.): Although "typical injury" was recorded from this State several years ago, the first actual specimens from the State to be identified were sent from Florence County, where larvae were infesting peach twigs on July 19.

Ohio E. W. Mendenhall (September 1): The oriental peach moth is general all over Ohio, being found in nearly every county.

Indiana J. J. Davis (August 30): Reports received from New Albany last fall indicated the presence of the oriental fruit worm. However, no adults were reared. A visit to this area in July of the present year revealed typical infested twigs in every orchard visited in Floyd County. Specimens were obtained and determined as the adult of this insect. Since then it has been found in destructive numbers at Aurora, Vincennes, and Boonville. Apparently the pest is generally distributed in southern Indiana.

Indiana and Kentucky B. A. Porter (September 24): Though practically absent early in the season, the oriental fruit moth has become extremely abundant near Henderson, Ky., and Poseyville, and Vincennes, Ind.. Late peaches are nearly 100 per cent infested in some orchards. The insect is probably well distributed over the southwestern portion of Indiana.

PLUM CUCURLIO (Conotrachelus nemuphar Hbst.)

Georgia O. I. Snapp (September 21): The insect was unusually abundant on peach this year at Fort Valley, and some growers have used post-harvest control methods to reduce the infestations.

BLUEBERRY

BLUEBERRY THRIPS (Frankliniella vaccinii Morg.)

Maine C. R. Phipps (August 27): This new blueberry pest, first noted in 1926 and later described as a new species, has been present in localized areas in 1928. Many "new burn" pieces have large spots where the plants have been completely defoliated by this pest. Such areas will fail to set fruit another season.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska M. H. Swenk (August 1-September 1): The grape leafhopper continued to be reported as injuring woodbine and grapevines up to the third week in August.

PECAN

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Texas

Monthly Letter of the Bureau of Entomology No. 172, August, 1928: During the week of August 6 to 11 H. S. Adair, in charge of the pecan insect field laboratory at Brownwood, Tex., visited Houston, Tex., and collected some pecan material there, finding that damage by the nut case bearer had been unusually heavy. The laboratory at Brownwood received some material from there earlier in the season, and a number of hyperparasites were reared. These insects may account for the heavy infestation in the vicinity of Houston in the present season. One grower estimated his loss at about 90 per cent of a full crop, and similar damage was reported by others.

AN APHID (Myzocallis fumipennellus Fitch)

Alabama

Monthly Letter of the Bureau of Entomology No. 172, August, 1928: G. F. Moznette, in charge of the pecan insect laboratory at Albany, Ga., spent August 1 to 4 at Spring Hill, Ala., near Mobile, conducting control experiments with the black aphid of the pecan, Myzocallis fumipennellus Fitch, which has been causing serious damage to pecan trees in the vicinity. The feeding of this aphid leads to defoliation.

A JUMPING APHID (Melanocallis caryaefolia Davis)

Alabama

H. P. Loding (September 19): This jumping aphid, which has been noticed by growers for two or three years (later in the season), appeared in July this year in some numbers, and has caused quite a lot of damage to pecans in yellowing and defoliation, especially on the varieties Schley and Allen; it may be found, however, on all other varieties and seedlings in small numbers. At present a new brood is appearing on the new growth brought out by defoliation. It would look as if this pest is to become of major economic importance, primarily by causing premature defoliation with detriment to the present crop, and to next year's crop by forcing a new growth at this time of the year.

ENGLISH WALNUT

WALNUT APHID (Chromaphis juglandicola Kalt.)

California

Monthly News Letter, Los Angeles County Horticultural Comm. Vol. 10, No. 9, September 15, 1928: Field climatic conditions were particularly favorable to the walnut aphid this past season and a late severe infestation resulted as attested by the suddenly blackened trees from the "sooty mold" fungus developing in the honey dew excreted by this pest.

CITRUS

LEAF-FOOTED PLANT BUG (Leptoglossus phyllopus L.)

Alabama

H. P. Loding. (September 19): This insect is abundant in some groves and doing much damage to green fruit of satsuma.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Horticultural Comm. Vol. 10, No. 9, September 15, 1928: High temperatures of the past few weeks have caused maximum activity on the part of liberated Cryptolaemus in mealybug infested citrus orchards, and though there is still considerable visible mealybug on the new fruit in many orchards, the abundance of beetles insures a rapid clean-up of the pest, according to Deputy Horticultural Commissioner H. A. Armitage, in charge of Los Angeles County Insectary. Recent checks have shown over 400 Cryptolaemus adults per tree in some orchards in the Rivera section.

Insectary liberations of Cryptolaemus, maintained at approximately 50,000 beetles per day during the month of August in the second covering of these properties in which the fumigation or spraying for other pests has interfered with the completing of the mealybug control, are being rapidly curtailed as the season advances. It is well understood by the growers ~~that~~ the control of the mealybug is accomplished not by the liberated beetles but rather by the increase in their progeny through succeeding generations. As their active working period ends with cold weather, the possibility of securing the necessary succeeding generations decreases rapidly as fall approaches. Liberations are now being limited to the few orchards showing more than the normal amount of mealybug and which have been subjected to late treatment for other insect pests.

BLACK SCALE (Saissetia olea Bern.)

California

Monthly News Letter Los Angeles County Horticultural Comm. Vol. 10, No. 8, August 15, 1928: Black scale in both the coast and interior citrus areas and Citricola in the east end of the county have reached a stage of complete hatch permitting the application of control measures throughout the county, reports Deputy Horticultural Commissioner H. H. Wilcomb, in Charge of Fumigation and Spraying in Los Angeles County.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Alabama

H. P. Loding (September 19): The purple scale on satsuma oranges, which earlier in the season seemed under splendid control, has increased enormously in the last few months of hot and moist weather, and crawlers are abundant at this time in most groves.

TRUCK - CROP INSECTS

GARDEN WEBWORM (Loxostege similalis Guen.)

Texas

F. L. Thomas (August 20): This insect was reported as destroying early fall vegetables, including tomato and cabbage, at Weslaco, Hidalgo County.

Haiti

R. C. Smith (August 27): One of the most abundant insects here is the garden webworm, which at the present season of the year is very abundant. I did not find any larvae, but the moths are very plentiful at lights and in sweepings.

SEMITROPICAL ARMYWORM (Prodenia eridania Gram.)

Georgia

E. L. Worsham (September 26): There is a general infestation of this insect throughout the State. It is badly infesting sweet potatoes, okra, tomatoes, and peppers.

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kby.)

Nebraska

M. H. Swenk (August 1-September 1): Blister beetles, apparently, from the description, Macrobasis unicolor, were reported doing serious injury to tomatoes, cucumbers, beets, and cabbage in Frontier County during the first week in August.

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

Maryland

E. N. Cory (July 25): A correspondent says that this pest has been present and numerous since 1924, and that it was so abundant on potatoes last fall (1927) that they had to resort to burning at Cornfield Harbor.

BLACK BLISTER BEETLE (Epicauta pennsylvanica DeG.)

Mio

E. W. Mendenhall (September 7): These blister beetles are quite bad on sugar beets in Miami County. (September 8): The black blister beetle is quite bad on gladiolus and aster plants. It seems to feed entirely on the bloom.

Indiana

J. J. Davis (August 30): The black blister beetle was reported damaging aster at Gary August 18.

EGGPLANT

EGGPLANT FLEA BEETLE (Eotrix fuscula Crotch)

Alabama

L. W. Brannon (September 18): This insect is doing severe damage to eggplants in the vicinity of Birmingham. I have seen several patches of eggplant injured to the extent that the leaves were shedding.

SWISS CHARD

SPOTTED BEET WEBWORM (Hymenia perspectalis Hbn.)

Alabama

L. W. Brannon (September 18): This insect has not been very abundant this season and has caused practically no damage to Swiss chard near Birmingham. Moths are very scarce and larvae are extremely hard to find.

CRUCIFEROUS PLANTS

IMPORTED CABBAGE WORM (Pieris rapae L.)

Nebraska

M. H. Swenk (August 1-September 1): The usual trouble with the imported cabbage worm was encountered during the period here covered.

Alabama

L. W. Brannon (September 18): Adults of the imported cabbage worm are very numerous and larvae are doing considerable damage to cabbage and collards in the vicinity of Birmingham.

HARLEQUIN BUG (Murgantia histrionica Hahn)

South Carolina

Franklin Sherman (July-August): In the spring this insect was scarce in the western part of the State, but as the season has advanced, it has recovered somewhat, and for the State as a whole the volume of complaints for the year is about normal.

M. H. Brunson (September 27): Frequent complaints of damage to collards have been received from several parts of the State.

Alabama

L. W. Brannon (September 18): Adults, nymphs, and eggs of the harlequin bug are fairly numerous on cabbage and collards in the vicinity of Birmingham, but they are not so numerous as they were last season and the damage is not so great.

ONION THRIPS (Thrips tabaci L.)

Connecticut

B. H. Walden (September 14): Over 50 acres of cauliflower is generally infested with Thrips, probably tabaci, at Southington. This is more abundant than last year.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Maryland

E. N. Cory (September 4): Reports of the presence of the Mexican bean beetle have been received from all parts of the State and on all varieties of beans. Damage has been very general and serious in many sections.

Virginia

O. I. Snapp (August 29): This insect has ruined the second crop of lima beans in the vicinity of Winchester. The infestation has been very heavy and much damage done.

South Carolina

Franklin Sherman (July-August): This insect has been more destructive than usual at Clemson College and reported to be abundant close to the eastern known limits of last year's spread.

Ohio

E. W. Mendenhall (September 1): The Mexican bean beetle is very bad in Columbus and vicinity and very bad in the same latitude across the State. (September 8): This insect is quite bad in southwestern Ohio on the garden beans.

Alabama

L. W. Brannon (September 18): The Mexican bean beetle infestation in the Birmingham district is more severe now than at this time last season. All stages of the insect can be found in the field in large numbers, and where no control measures are used beans are completely defoliated. Third-generation beetles started emerging August 25 and are now present in the fields in large numbers. Damage to pole lima beans is now very severe, as bunch beans are scarce in the district. No beetles have been found in hibernation to date.

Texas

F. L. Thomas (August 20): This season this insect has attracted attention in the gardens of El Paso Valley. The summer rains have been more abundant than usual.

BEAN LEAF ROLLER (Goniurus proteus L.)

North Carolina

W. A. Thomas (August 30): For the first time in the writer's experience, the bean leaf roller has appeared in destructive numbers in the vicinity of Chadbourn. Plants were observed today on which more than half of the foliage was injured. Three larvae were observed on a single leaf on many plants.

Florida

F. S. Chamberlin (September 20): The bean leaf roller is doing severe damage to beans in Gadsden County.

CUCURBITACEOUS PLANTS

PICKLE WORM (Diaphania nitidalis Stoll)

Indiana

J. J. Davis (August 30): The pickle worm was reported destructive to pickles at Evansville August 20, Decatur August 25, and Bluffton August 28.

Missouri

L. Haseman (September 26): In the last few weeks considerable damage has been done, especially in the southeastern part of the State, by the pickle worm in cantaloupes, melons, and squashes.

SQUASH BORER (Melittia satyriniformis Hbn.)

Nebraska

M. H. Swenk (August 1-September 1): During the middle and latter part of August, reports were received of injury to squash and pumpkin vines by the squash borer.

MELON APHID (Aphis gossypii Glov.)

Nebraska

M. H. Swenk (August 1-September 1): The melon aphid continued to be reported up to about the middle of August, attacking cucumbers and melons.

SQUASH BUG (Anasa tristis DeG.)

Nebraska

M. H. Swenk (August 1-September 1): The squash bug continued to be reported up to about the middle of August attacking squash

SQUASH BEETLE (Epilachna borealis Fab.)

North Carolina

J. N. Tenhet (August 25): The squash ladybird has completely defoliated many fields of watermelons and cantaloupes in the vicinity of Chadbourn and in some instances has eaten all of the green epidermis from the melons, rendering them unsalable.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Ohio

E. W. Mendenhall (September 7): The striped cucumber beetle has done considerable damage to cucumbers in Franklin County.

Missouri

L. Haseman (September 26): The striped cucumber beetle has been unusually abundant on late melons and cucumbers and it is going into the winter in goodly numbers.

ONIONS

ONION MAGGOT (Hylemyia antiqua Meig.)

Nebraska

M. H. Swenk (August 1-September 1): In Scotts Bluff County during the second week in August, the onion maggot was found doing damage to onions. This is the first time this insect has been found in the State as a serious pest. Flies from maggots concerned in this injury that had pupated about the middle of August emerged from August 28 to September 4.

SIX-SPOTTED LEAFHOPPER (Cicadula sexnotata Fall.)

Indiana

J. J. Davis (August 30): Onion growers in many sections of the State have experienced a blighting of onions, causing thousands of dollars damage. From all observations there is evidence that this trouble is caused by a leafhopper, Cicadula sexnotata, (tentatively determined by DeLong). Positive proof has not yet been obtained.

SUGAR BEET

BERTHA ARMYWORM (Barathra configurata Walk.)

Montana

W. B. Mabey (August 23): The one outstanding development, aside from the lack of insect damage, has been the appearance of what is apparently the Bertha armyworm. These worms have appeared recently quite generally along the edge of the State, especially in Lincoln, Flathead and Lake Counties. As yet they have not done any considerable damage except in one small section near Ronan, where they have been rather seriously injuring sugar beets.

SWEET-POTATO

SWEET-POTATO LEAF BEETLE (Typophorus viridicyaneus Crotch)

Maryland

E. N. Cory (July 16): This insect was collected on sweet potato at Cambridge and determined by H. S. Barber, this being the first record.

S O U T H E R N F I E L D - C R O P I N S E C T S

TOBACCO

TOMATO WORM (Protoparce sexta Johan.)

North Carolina

J. N. Tenhet (August 28): The damage to tobacco this season from the horn worm has been greater, in the South Carolina Bright belt, than for many years. All suckers left in standing in the fields around Chadbourne have been stripped, and the worms are pupating in immense numbers. This may presage an even more severe outbreak next year.

BUDWORM (Heliothis virescens Fab.)

North Carolina

J. N. Tenhet (August): The budworm has been unusually prevalent in the vicinity of Chadbourne this season on tobacco. Injury was especially marked in the middle of the season.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina

J. N. Tenhet (August 10): The tobacco flea beetle has been unusually prevalent this season all through the South Carolina Bright belt and has done considerable damage.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway and W. E. Haley (September 22): A survey during

August and September reveals a very low infestation this year by the sugarcane borer. The stalk infestation in sugarcane fields varies from zero to 34.5 per cent, with a few fields in on exceptional locality somewhat higher. An average of all fields is 7.6 per cent as compared with an average in October 1927 of 79.1 per cent. The infestation will increase slightly before the cane is cut, but it will not approach anywhere near the average for 1927.

FOREST AND SHADE - TREE INSECTS

GIPSY MOTH (Porthetria dispar L.)

Rhode Island

A. E. Stene (September 21): The season in general has apparently been favorable to insects. Among those which have occurred in increasing numbers this year is the gipsy moth, which, while it has not caused very severe defoliation in any part of the State, has still been numerous enough in many places so that its work has been readily noticeable. Two tracts of about 500 acres badly damaged last year would have been stripped but for spraying.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

South Carolina

M. H. Brunson (September 8): Considerable damage to evergreens is being done by the bagworm at Ware Shoals.

Ohio

E. W. Mendenhall (September 7): I find some of the apple orchards in Preble County infested with the bagworm and damage is being done.

Herbert Osborn (September 26): Numerous reports of serious injury to arborvitae and cedar trees in and about Columbus and reports of abundance over wider areas have been received.

Indiana

J. J. Davis (August 30): The bagworm was reported as seriously attacking evergreens at Indianapolis and Franklin August 2.

FALL WEBWORM (Hyphantria cunea Drury)

Rhode Island

A. E. Stene (September 21): The fall webworm showed up in large numbers earlier in the season, but present indications are that it has been parasitized more vigorously than in previous seasons.

West Virginia
and
Virginia

O. I. Snapp (September 5): This insect is more abundant than usual around Charles Town, W. Va., and in northern Virginia. One of the heaviest infestations ever observed on apple was seen today at Charles Town.

North Carolina

W. A. Thomas (September 4): A very light infestation of this

insect has been observed working on sweet gum in the forests near Chadbourn.

Ohio E. W. Mendenhall (September 7): The fall webworm is quite prevalent in southwestern Ohio on deciduous trees and shrubs. (September 25): The fall webworm is quite general in Ohio attacking apple and other trees.

Missouri L. Haseman (September 26): This caterpillar has attracted a great deal of attention during the past few months and it has been more abundant than usual.

Kansas J. W. McColloch (September 15): The fall webworm is rather general in the State this year. Injury has been noted on a variety of shade and fruit trees.

Mississippi K. L. Cockerham (August 29): For the past several weeks this insect has been showing up in considerable abundance on pecan and other trees near Biloxi.

Oregon L. P. Rockwood (September 11): Nests of the fall webworm are unusually abundant in this vicinity (Forest Grove); black and English walnuts and pears preferred among cultivated trees attacked.

SATIN MOTH (Stilpnotia salicis L.)

Rhode Island A. E. Stene (September 21): The satin moth is on the increase in the northern and eastern sections of the State.

RED SPIDER (Tetranychus telarius L.)

South Carolina Franklin Sherman (July-August): Despite a larger rainfall than usual, this dry weather species developed to mildly epidemic abundance in several localities in the central and Coastal Plain sections.

Ohio E. W. Mendenhall (September 7): The red spider is quite bad on willow trees in nurseries as well as on evergreens in Montgomery County. The weather is very dry, which makes the damage a great deal worse.

Indiana J. J. Davis (August 30): The common red spider was reported as abundant on Juniper at Elkhart August 4.

MULBERRY WHITEFLY (Tetraleurodes mori Quaint.)

Connecticut W. E. Britton (September 24): This insect is more abundant than usual at New Haven on Linden, Cornus, and Kalmia. For nearly three weeks, beginning September 1, the air was full of adults and they would alight on windows, tops of automobiles, etc.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Missouri

L. Haseman (September 26): With the first cool days of late September, inquiries regarding the boxelder bug have been received. The insect is unusually abundant in Columbia.

CAMPHOR TREES

CAMPHOR THRIPS (Cryptothrips floridensis Watson)

Mississippi

K. L. Cockerham (August 10): On the above date reports were received that ornamental camphor trees were dying at Biloxi. Examination showed that the trees were attacked by the camphor thrips and the injury was so severe in one case at least, that the trees were killed outright.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Poisd.)

Indiana

J. J. Davis (August 30): The catalpa sphinx was reported defoliating catalpa at La Fayette August 30.

CATALPA LEAF MINER (Agromyza citreifrons Mass.)

Indiana

J. J. Davis (August 30): The catalpa leaf miner was very abundant on catalpa at Terre Haute, August 8. We also observed it as common at Vincennes a few weeks before.

ELM

LARGER ELM LEAF BEETLE (Monocesta coryli Say)

Arkansas

W. J. Baerg (September 13): At Fayetteville many slippery elms are completely defoliated, some American elms are stripped and some hawthorns show conspicuous injury.

HACKBERRY

HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma Riley)

Nebraska

M. H. Swenk (August 1-September 1): Reports of infestations of hackberry trees with the hackberry nipple gall were received up to August 20.

MAPLE

GREEN-STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Missouri

L. Haseman (September 26): An epidemic of this insect appeared in the western section of the State, resulting in complete defoliation of many trees.

TULIP

TULIP TREE SCALE (Toumeyella liriodendri Gmel.)

Indiana

J.J. Davis (August 30): The tulip tree lecanium was very abundant on tulip trees at Nashville August 11.

BLACK WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Missouri

L. Haseman (September 26): This caterpillar is just maturing and it has been unusually common during the month.

INSECTS AFFECTING GREENHOUSE AND
ORNAMENTAL PLANTS AND LAWNS

A CENTIPEDE (Scutigera immaculata Newp.)

Indiana

J. J. Davis (August 30): The greenhouse centipede, Scutigera immaculata, was reported destructive in greenhouses in central Indiana.

DAHLIA

TARNISHED PLANT BUG (Lygus pratensis L.)

Rhode Island

A. E. Stene (September 21): We have had a rather unusual outbreak of the tarnished plant bug. Dahlia growers especially have complained of attacks from this insect.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Rhode Island

A. E. Stene (September 21): For the first time in several years the euonymus scale has been sent in to the office. It is apparently found in several places in the State this year.

South Carolina M. H. Brunson (August 31): This insect has been reported attacking *Euonymus* at Greenville, Ware Shoals, Spartanburg, and Antreville.

HIBISCUS

A PLANT BUG (*Corizus* sp.)

South Carolina Franklin Sherman (July-August): On July 13 a lady in Columbia sent specimens of this genus with the assertion that they were damaging Hibiscus, and the insects were adhering closely in the crevices of the wilted seed-pod which accompanied them. The bugs were larger and more gaudy in appearance than the native species in our collection and have not yet been identified.

LILAC

OYSTER-SHELL SCALE (*Lepidosaphes ulmi* L.)

Indiana J. J. Davis (August 30): The oyster-shell scale was reported damaging lilac at Woodburn on July 25.

VERBENA

A BLOTCH MINER (*Agromyza platyptera jucunda* V. d.W.)

New York G. H. Griswold (September 24): This insect has been found in considerable numbers in the insectary flower garden at Ithaca attacking *Verbena hybrida* and making small blotch mines in the leaves.

LAWNS

ANTS (Formicidae)

Indiana J. J. Davis (August 30): We continue to receive reports of ants in houses and in lawns, especially the latter. Reports the past month have come from Rossville, Richmond, Goshen, and South Bend.

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MAN

FLEAS (Siphonaptera)

- eneral F. C. Bishopp (July-August): Many complaints have been received of infestations of houses and premises with fleas. These reports come from 18 States, mostly east of the Mississippi River, the largest number coming from the District of Columbia, Maryland, and Pennsylvania. It appears that more trouble is being experienced from fleas this year than usual.
- outh Carolina Franklin Sherman (July-August): The complaints of fleas in and about houses seem more numerous than usual.
- ndiana J. J. Davis (August 30): Fleas have been reported very annoying in houses and barns at Martinsville, Bedford, North Manchester, Darlington, and Valparaiso.
- braska M. H. Swenk (August 1-September 1): Infestations of farm premises by Ctenocephalus canis Curtis and C. felis Bouche were received from several localities during the period here covered.
- Missouri L. Haseman (September 25): The usual run of complaints regarding fleas around farm buildings has been received.

HUMAN FLEA (Pulex irritans L.)

- Oregon F. C. Bishopp (July-August): Reports of the occurrence of a general infestation of premises by the human flea have been received from Oregon.

A MOSQUITO (Culex sp.)

- Missouri L. Haseman (September 26): Mosquitoes of the genus Culex were particularly annoying during the first two weeks of September in central Missouri.

A SNIPE FLY (Leptidae)

- Montana W. B. Mabey (August 25): A biting leptid fly (species undetermined) has been unusually abundant this season, causing considerable annoyance, especially to fishermen and campers.

STINGING CATERPILLARS (Eucleidae)

- South Carolina Franklin Sherman (July-August): Several species of these insects have been sent in, sometimes with complaint of stinging persons. Our own field observations lead to the belief that the larvae are more abundant than usual.

M. H. Brunson (August 31): Five different species of larvae belonging to the family Eucleidae have been found recently at Clemson College. They are unusually abundant.

MASKED HUNTER (Reduvius personatus L.)

Nebraska

M. H. Swenk (August 1-September 1): A complaint was received during the middle of August from a person in Butler County having been bitten by this insect.

CATTLE

HORN FLY (Haematobia irritans L.)

Missouri

L. Haseman (September 26): The horn fly has continued to be troublesome throughout the month.

STABLE FLY (Stomoxys calcitrans L.)

Missouri

L. Haseman (September 26): The stable fly has continued to be troublesome throughout the month.

HORSES

HORSE FLIES (Tabanidae)

Missouri

L. Haseman (September 26): These flies were unusually abundant on live stock during the latter part of August and early September in central Missouri.

H O U S E H O L D A N D S T O R E D -

P R O D U C T I N S E C T S

TERMITES (Reticulitermes spp.)

South Carolina

Franklin Sherman (July-August): Upon two occasions these insects have been sent in with complaints of their attack upon chrysanthemum plants at or just below the surface of the ground.

Indiana

J. J. Davis (August 30): White ants were reported damaging a building at Brazil on August 8.

Missouri

L. Haseman (September 26): The usual flood of complaints about termites in houses and other buildings has continued during September.

Nebraska

M. H. Swenk (August 1-September 1): Additional reports of injury by our common termite, Reticulitermes tibialis Banks, came

from York County, where the pest was attacking the roots of cherry trees, and from Howard County, where it was threatening a dwelling house, during the period here covered.

Kansas

J. W. McColloch (September 20): On September 6, termites were causing considerable damage in a lumber yard at Ottawa, and on September 7 they were badly damaging the oak floors in a new house at Hoisington.

BOOKLOUSE (Troctes divinatoria Mull.)

Indiana

J. J. Davis (August 30): Book lice have been abundant in dwellings at Indianapolis and La Fayette the past month.

Nebraska

M. H. Swenk (August 1-September 1): A complaint was received from Otoe County during the second week in August of a severe infestation of a house with this psocid.

SILVER FISH (Lepisma saccharina L.)

Kansas

J. W. McColloch (September 15): Fish moths have been abundant and troublesome in houses and apartment buildings at Wichita and Wellington. At Hutchinson they are giving trouble in a wholesale paper house. A library at Manhattan reports damage to books.

CASE-BEARING CLOTHES MOTH (Tinea pellionella L.)

Indiana

J. J. Davis (August 30): The common clothes moth was reported damaging rayon silk at La Porte August 16.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas

J. W. McColloch (September 10): There has been an epidemic of the cigarette beetle in upholstered furniture at Coffeyville. Many houses have reported infestations.

LARDER BEETLE (Dermestes lardarius L.)

Indiana

J. J. Davis (August 30): The larder beetle was reported as infesting home-cured meat at Auburn August 18.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Indiana

J. J. Davis (August 30): The angoumois grain moth was reported damaging wheat at Dyer August 6.

Kansas

J. W. McColloch (September 21): At the present time, stored grain insects are receiving considerable attention, owing to the fact that the farmers had considerable difficulty in harvesting and getting their grain into the bin. Much of the

grain was held in the field for a considerable period, with the result that the angoumois grain moth and weevils infested it. Also much of the wheat that has gone into the bin is damp and subject to heating, with again provides ideal conditions for the development of stored-grain pests.

WEEVILS (Calendra spp.)

Kansas

J. W. McColloch (September 20): Stored-grain insects, especially weevils, are causing considerable trouble throughout the State. Conditions have been very favorable for their development. Much of the grain went into the bins in a damp condition and has heated. In some areas wheat threshing was delayed and grain in stacks and shocks became infested. Weevils are more abundant than last year, reports having been received from Ford, Mitchell, Republic, Saline, Clay, Riley, Chautauqua, and Jefferson Counties.

GRANARY WEEVIL (Calendra granaria L.)

Missouri

L. Haseman (September 26): This weevil and the other stored-grain pests have been complained of by a number of farmers who are holding their wheat.

SAW-TOOTH GRAIN BEETLE (Oryzaephilus surinamensis L.)

Rhode Island

A. E. Stene (September 21): Housekeepers have sent in the saw-tooth grain beetle from three places in the northeastern part of the State with complaints that it was present in large numbers.

DRUG-STORE WEEVIL (Sitodrepa panicea L.)

Nebraska

M. H. Swenk (August 1-September 1): Reports of stored-grain pests were received in about the normal numbers during August. These included one report of the drug-store weevil, which was found in an elevator in Otoe County, and some tenebrionid beetles which were identified as a species of Platydema, which were found working on the ears of cribbed corn in Nemaha County early in August.

THE INSECT PEST SURVEY
BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR OCTOBER, 1928.

False wireworms are reported throughout the latter half of the month as doing very serious damage in western Kansas, where they were cleaning up fall-sown wheat.

The apple curculio in Massachusetts particularly in the western part of the State, was abnormally abundant this season, doing almost as much damage as the plum curculio.

The peach borer is emerging later in the south than usual this year. Adults were observed in the Fort Valley section as late as October 11. Infestations appear to be heavier than usual but owing to unprofitable conditions in the peach belt less control treatment than usual is being given.

The grape phylloxera has been found for the first time in Los Angeles County. This is the second time that it has been recorded from southern California, the previous record being from San Diego County.

The walnut husk maggot, Rhagoletis juglandis Cresson, is reported from the Chino-Pomona section of southern California. The infestation appears to be of several years standing and is most serious on English walnuts.

An unusual habit of the citrophilus mealybug is reported from California. The insects are infesting figs through the apical opening and are found in all stages within the fruit.

The harlequin bug has been more prevalent in northern Virginia than in many years. Considerable damage occurred in some local areas.

Late surveys indicate that the Mexican bean beetle has advanced eastward about two tiers of counties in New York over the known distribution of last year, and has entered the southeastern part of the State in Orange and Rockland Counties. It is recorded for the first time this year from the greater part of New Jersey and Delaware. In North Carolina the insect has reached the coast, and in Indiana it has reached the northeast corner and has crossed the State line into Branch and Ingham Counties, Mich. There has been practically no extension to the west or south.

A beetle usually considered quite rare, Calligrapha rhoda var. walshiana Blatch., was found seriously defoliating purple leaf plum near Detroit, Mich.

Fleas have occasioned more trouble during the past season than for many years, especially in the Southern and Central States.

Cattle grubs have not been so numerous this year as during the previous 4 or 5 years. Grubby hides are running this year from 40 to 50 per cent as against 75 to 100 per cent in 1927.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER AND OCTOBER, 1928

Scouting for the Mexican bean beetle in southern Ontario revealed no trace of the insect in any of the localities in Kent, Essex, Elgin, Halton and York Counties where it was found for the first time last year. Collections, however, were taken in the townships of Walsingham and Townsend, Norfolk county; in the township of Markham, York county, and at Leamington, Essex county.

During the present season the European corn borer was found for the first time in New Brunswick. Collections were taken at several points in Queens and Sunbury counties, indicating an infestation extending from Gagetown to Maugerville (15 miles) in the St. John River Valley. No scouting for extension of infested territory was undertaken in Ontario, as the entire corn growing area is known to be infested. Scouting in Quebec, however, indicated that very little new territory had become infested during 1928.

The Colorado potato beetle has been unusually abundant in northern Saskatchewan this season.

The grey-banded leaf-roller, Eulia mariana Fern., has caused more severe injury to certain varieties of apples in the Berwick district, Nova Scotia, than since its discovery in 1925.

The cyclamen mite has been found causing injury to strawberries in plantations at several points in Ontario and southern Quebec.

During the present season there has been quite an extensive spread of the oriental peach moth in the Niagara peninsula, Ontario.

The hemlock looper again occurred in severe outbreak form on hemlock, in the Muskoka Lakes district, Ontario, and it is expected that the outbreak will continue severe next year. There is also an active outbreak of this species in Saguenay County, Quebec, affecting pure stands of balsam over an area estimated at approximately four thousand square miles.

The spruce budworm outbreak in the Sudbury district, Ontario,

continues severe and the infestation appears to be spreading westward. On Cape Breton Island there has been a marked decrease in the infestation by this species.

There is a serious outbreak of the larch sawfly, in Ontario, extending from North Bay west to Sault Ste. Marie, and as far north as Ranger lake.

The European leaf-mining sawfly, Fenusa pumila Klug., badly damaged a considerable percentage of the foliage of birch trees in central and southern New Brunswick.

Heavy infestations of the bark-beetle Dendroctonus monticolae Hopk., in lodgepole pine, are reported in the North Thompson river district, and the West Fork of Kettle river, British Columbia.

The tortricid, Sparganothis pettitana Rob. continued in outbreak form on red sugar maple on Cape Breton Island.

GENERAL FEEDERS

.GRASSHOPPERS (Acrididae)

Nebraska

M. H. Swenk (September 1-October 1): Young alfalfa, sown about the middle of August, has been seriously attacked by grasshoppers (Melanoplus spp.) in several different parts of eastern Nebraska. Most of these complaints were received about the middle of September, Saline County seemed to be an important center of this trouble. At the same time complaints were received from Douglas and Butler Counties, of severe damage to gladiolus, dahlias, asters, and other garden flowers.

Kansas

J. W. McColloch (October 19): Grasshoppers have continued their depredations on fall-sown wheat and alfalfa. Damage has occurred in nearly all parts of the State but is more pronounced in the western part. In Meade County they have killed out quite a bit of wheat, making it necessary to replant.

WIREWORM (Elateridae)

Indiana

J. J. Davis (August 30): Wireworms were reported damaging potatoes at Indianapolis August 5.

CEREAL AND FORAGE CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Kansas

J. W. McColloch (October 10): A survey was made in the northern half of the state during the first week in October. Eggs were found in abundance on the young plants in Trego, Ness, Phillips, Rooks, Ellis, Rush, Smith, Osborne, Russell, Barton, Jewell, Mitchell, Lincoln, Ellsworth, Ottawa, Saline, McPherson, Dickinson, Marion, Geary, Shawnee, Osage, Jefferson and Douglas Counties. Thus far, we have not had an opportunity to make a survey of the southern half of the State. There were plenty of flaxseed in the stubble throughout south-central Kansas after harvest.

Nebraska

M. H. Swenk (September 1-October 1): Complaints received during September indicate the obvious presence of the Hessian fly in the wheat stubble in certain parts of two additional Nebraska counties-Washington and Nuckolls.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas

J. W. McColloch (October 20): False wireworms are causing

considerable damage to fall-sown wheat in parts of western Kansas; Ford, Edwards, and Reno Counties. The weekly crop report of the Kansas State Board of Agriculture for October 1 says the false wireworms are doing considerable damage. Again on October 15 they are reported as taking a heavy toll. Weather conditions have been very dry, and wheat has been planted in dry soil where it lies without germinating. (October 22): Additional reports indicate that the false wireworm is causing serious damage in Clark, Comanche, Kiowa, and Ford Counties.

CORN

STALK BORER (Papaipema nebris nitela Guen.)

Indiana

J. J. Davis (October 1): Additional reports of abundance in corn have been received from Frankfort, Whitestown, and North Vernon.

CORN-FEEDING SYRPHUS FLY (Mesogramma politum Say)

North Carolina

L. Currie (September 5): A 10-acre field quite badly infested, this is the first instance of such injury that has been noted. It is apparently a sporadic outbreak, possibly due to the wet season.

GRASS

BLACK CUTWORM (Agrotis ypsilon Rott.)

Indiana

J. J. Davis (October 1): The greasy cutworm was abundant and apparently killing bent grass on golf greens at Bluffton, September 8.

A SCARABAEID BEETLE (Ochrosidia villosa Burm.)

Pennsylvania

J. N. Knull (October 2): About 2 acres of lawn in part of the Home infested with the larvae of this insect. Roots of grass eaten off and grass dying (Jednota Home, Middletown).

ALFALFA

ARMYWORM (Cirphis unipuncta Haw.)

Illiana

J. J. Davis (October 1): Appeared for the first time this season at Monticello September 17, where three acres of young alfalfa were destroyed.

FRUIT INSECTS

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

Ohio

E. W. Mendenhall (October 17): The snowy tree crickets have done considerable damage to raspberry plantations, grapevines, apple and peach trees in the vicinity of Piqua (Miami County).

APPLE

APHIDS (APHIDAE)

Massachusetts

A. I. Bourne (October 24): Apple aphids which were negligible during the greater part of the growing season, became rather abundant, particularly in some orchards, toward the time of harvest. Coming so late in the season, they did not cause any serious amount of injury.

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts

A. I. Bourne (October 24): Late side-worm injury by codling moth was in about normal proportions in well sprayed orchards. Where no particular attention was given to its control or where for one reason or another the spray program was interrupted, the species did a considerable amount of damage. Owing to the cold and unfavorable weather conditions prevailing during the time of the flight of spring moths, injury by this species was almost entirely confined to side-worm injury. Very little blossom-end injury was noted in any orchard.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Massachusetts

A. I. Bourne (October 24): In regard to the apple maggot, the infestation on the whole was not so heavy as last year, but was rather spotty. In some orchards the damage was very severe, indeed, and manifested itself particularly in such varieties as Gravensteins, and to some extent in such varieties as Wealthy and McIntosh.

HAG MOTH (Phobetrus pithecius S. & A.)

North Carolina

C. H. Brannon (September 25): A larva of this species was sent in by R. L. Sloan, Morganton, Burke County.

RED-HUMPED CATERPILLAR (Schizura concinna A. & S.)

Massachusetts

A. I. Bourne (October 24): Red-humped caterpillars were slightly less abundant than last year and, while generally present, caused on the whole less injury than normally.

RED-BANDED LEAF ROLLER (Eulia velutinana Wlk.)

Massachusetts

A. I. Bourne (October 24): The red-banded leaf roller was another species the work of which has been quite conspicuous on fruit at harvest. While this type of injury has not as yet assumed any large proportions, nevertheless it was quite conspicuous, particularly on McIntosh and Baldwins, very generally throughout the State.

APPLE REDBUG (Lygidea mendax Reut.)

Massachusetts

A. I. Bourne (October 24): Redbug on the whole was very light in the eastern half of the State, but in the hillside orchards in the western counties it occurred in serious abundance.

LEAFHOPPERS (Jassidae)

Massachusetts

A. I. Bourne (October 24): Apple leafhoppers, which were negligible during the greater part of the growing season, became rather abundant, particularly in some orchards toward the time of harvest. Coming so late in the season they did not cause any serious amount of injury, and simply constituted something of a nuisance at the time of packing of the fruit.

Missouri

L. Haseman (September 26): On the night of September 13 at Columbia there were such swarms of leafhoppers, including several species attracted to bright lights, as I have never seen before. The species however were not determined.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Massachusetts

A. I. Bourne (October 24): In the hill orchards, particularly in the western part of the State, examination of fruit at harvest showed a considerable amount of injury by the apple curculio. In many orchards it caused an amount of injury equal to or greater than that caused by the plum curculio. There seems to be an unusual amount of this, this past season -- much more than has normally been the case.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio

E. W. Mendenhall (October 15): The apple flea weevil is found in Delaware County in large numbers, also found at Wooster and Steubenville and reported from Cincinnati and Chillicothe.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Georgia

O. I. Snapp (October 11): A number of male and female adults

were observed today on the wing and emerging from trees. This indicates that they are emerging later than usual this year. Normally they have all emerged by October 1 in this locality (Fort Valley). Paradichlorobenzene is being used this week in Georgia. On account of the late moth emergence the usual application dates for Georgia are a little too early this year. (October 19): The infestation is apparently heavier this year than usual. There was not so much paradichlorobenzene used this year as formerly on account of unprofitable crops during recent years at Fort Valley.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Mississippi

R. W. Harned (September 26): Injured peach twigs sent from New Albany, ., on September 10, were found to contain larvae that have been tentatively identified as those of the oriental peach moth.

Ohio

E. W. Mendenhall (October 8): The oriental peach moth is general all over Ohio. There is hardly any peach fruit which is not wormy. They are surely a great menace to the peach industry.

PIUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

O. I. Snapp (October 19): Adults are now leaving orchards for hibernating quarters at Fort Valley.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

O. I. Snapp (October 19): The general infestation is less than the average in the Middle Georgia Peach Belt. The season has not been very favorable for scale increase. A good deal of red fungus has been observed in some orchards in the middle western part of the State.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska

M. H. Swenk (September 1-October 1): Additional reports of injury to grape leaves by the grape leafhopper were received during the first ten days of September.

GRAPE PHYLLOXERA (Phylloxera vitifoliae Fitch)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Vol. 10, No. 10, October 10, 1928: An infestation of the grape phylloxera has recently been found in a vineyard near

San Gabriel by representative of the County Horticultural Commissioner, Harold J. Ryan. Specimens of the insect sent to the State Department of Agriculture, were in turn forwarded by that Department to Washington, D. C., where a positive identification was made. The infestation appears to be of several years standing, as the owner of the vineyard reports that grape vines in the plot found infested have been dying back for some time.

Although the grape phylloxera is first recorded as having been introduced into the State of California about 75 years ago and has spread quite widely in the northern part of the State, it has never gained a foothold in the south. The only previously recorded infestation in the southern part of the State being in San Diego County.

ENGLISH WALNUT

WALNUT HUSK MAGGOT (Rhagoletis juglandis Cress.)

California

Harold J. Ryan (October 19): The black walnut fly Rhagoletis juglandis has been reported from the Chino-Pomona section of Southern California. Chino is in southwestern San Bernardino County, and Pomona in the adjacent portion of eastern Los Angeles County. The infestation is likely of four years standing and serious injury has been noted for the past two years. The insect seems to prefer English walnut to the black walnut.

PECAN

AN APHID (Myzocallis fumipennellus Fitch)

Alabama

T. S. Bissell (October 15): This year the black aphid has been very scarce in the region of Camp Hill and Auburn, serious defoliation having resulted on many trees. On October 15 few aphids were present.

Georgia

T. S. Bissell (October 15): The black aphid has been scarce in the Barnesville region this year. In one orchard Van Deeman trees have been somewhat defoliated, but other orchards have been very lightly infested.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia

O. I. Snapp (October 19): Has done some damage in several pecan groves at Fort Valley.

T. S. Bissell (October 15): The shuck worm is much less abundant than in 1927.

PECAN WEEVIL (Balaninus caryae Horn)

Alabama

T. S. Bissell (October 15): The weevil was found to be severe at Camp Hill. on October 15. In one orchard the crop on 100 Schley trees had been almost totally destroyed while other varieties were only slightly attacked.

Georgia

T. S. Bissell (September 17): The weevil has been unusually severe in pecans this year. The Schley variety was the worst infested, next in order being Stuart. Later maturing varieties, as Frotscher, Mobile, and Teche, are almost free from attack. Adults were active in the orchards from July 14 to September 17. Emergence from the soil began at least two weeks later than it did in 1927 and ended considerably later. Weevil grubs have now reached the height of issue from nuts. Infestation by this insect is decidedly spotted, the greater part of pecan orchards being largely free from attack.

CITRUS

A WEEVIL (Artipus psittacinus Gyll.)

Haiti

Roger C. Smith (October 15): This is probably the most common injurious insect of Haiti. It has been very abundant this month particularly on citrus. The adult beetles eat the foliage, beginning at the margins. The numbers on the younger cotton plants the last of September were particularly high.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Horticultural Commission, Vol. 10, No. 10, October 15, 1928: Though the citrophilus mealybug as well as other species of scale insects have often been observed to attack the fig externally, only recently has it come to the attention of the County Horticultural Commissioner's office that they do at times even enter the fruit through the apical opening. Specimens of figs recently submitted to the office showed mealybugs within the fruit in all stages of development and evidently finding the feeding conditions much to their liking. It can be easily imagined what the reaction of the consumer would be were infestations of this nature to become general.

Though in a few orchards some mealybug is still noticeable on the new fruit, infestations in general are at a very low ebb and the field situation as a whole represents a very satisfactory condition. Little or no activity on the part of the mealybug need be expected for several months.

TRUCK - C R O P I N S E C T S

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

Massachusetts A. I. Bourne (October 24): In regard to the vegetable insects there was found to be a late infestation of the imported cabbage butterfly on cabbage and cauliflower - much more severe than has been normally the case in recent years. Any plants which were not kept well protected by sprays were found to be severely riddled throughout both eastern and western Massachusetts.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia W. S. Abbott (September 1928): Much more abundant than usual at Vienna on crucifers.

P. J. Chapman (October 4): A 10-acre field is being seriously damaged by adults and fourth and fifth stage nymphs at Lynnhaven. Serious injury occurred only in local areas, but the field was generally infested.

Alabama L. W. Brannon (October 25): Adults, nymphs, and eggs of the harlequin bug are still fairly numerous at Birmingham, on collards, but they are not so numerous as they were last season, and the damage is not so great.

Mississippi R. W. Harned (September 26): Harlequin cabbage bugs are quite abundant in all sections of the State at the present time. Specimens have recently been received from Attala, Forrest, Lauderdale, and Walthall Counties, with reports of serious injury to collards in each case.

STRAWBERRY

LATE STRAWBERRY SLUG (Empria maculata Norton)

Ohio E. W. Mendenhall (September 26): The work of the strawberry sawfly is quite noticeable in some strawberry plantations in Knox County.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New York Neale F. Howard, (in cooperation with the States) to September 19, 1928: This insect was reported from the following counties: Ontario, Yates, Schuyler, Chemung, Orange, and Rockland.

- New Jersey Neale F. Howard (in cooperation with the States) to September 19, 1928: This insect was reported from the following counties: Cape May, Cumberland, Salem, Atlantic, Gloucester, Camden, Burlington, Monmouth, Middlesex, and Warren.
- Delaware Neale F. Howard (in cooperation with the States) to September 19, 1928: Reported from Kent and Sussex Counties.
- Virginia P. J. Chapman (October 23): The invasion of the Mexican bean beetle into important snap and lima bean centers of tide-water Virginia was completed this year. Eastern Shore (Accomac and Northampton Counties) is territory not known to have reported previously as ⁱⁿthe infested column, while Princess Anne, Norfolk, and Nansemond Counties, embracing the large snap-bean area around Norfolk, also is generally, but only lightly infested. On Eastern Shore lima beans planted in May or early June became seriously damaged by fall, while it appears that July plantings were not appreciably injured. Around Norfolk and Portsmouth no commercial planting of snap beans was seriously infested this year. Garden patches, however, were badly injured everywhere in this area. Growers are expecting serious injury in commercial plantings in 1929.
- North Carolina Neale F. Howard (in cooperation with the States) to September 19, 1928: This insect was reported from the following counties: Bertie, Washington, Pasquotank, and Fender.
- C. H. Brannon (September 10): The Mexican bean beetle has spread practically all over the State. Severe damage started late this season on account of the cool spring; however, tremendous damage was caused during the summer.
- South Carolina Neale F. Howard (in cooperation with the States) to September 19, 1928: This insect was reported from Florence and Clarendon Counties.
- C. O. Eddy (October 24): About two-thirds of the Epilachna corrupta present went into hibernation during a few days of cool weather beginning September 20, at Clemson College. The other one-third remained active and laid eggs to produce another partial generation. Hibernation is very nearly complete at this time.
- Indiana J. J. Davis (October 1): The Mexican bean beetle was abundant at Matthews, September 18.
- Neale F. Howard (in cooperation with the States) to September 19, 1928: Reported from border of DeKalb and Stauben, Allen, Whitley, and DeKalb Counties.

Michigan Neale F. Howard, (in cooperation with the States) to September 19, 1928: Reported from Ingham and Branch Counties.

Tennessee Neale F. Howard, (in cooperation with the States) to October 19, 1928: Reported from Hardeman County.

Alabama L. W. Brannon (October 25): The first Mexican bean beetles in 1928 were found going into hibernation on September 24, Ten beetles were found in an area of about 9 square feet. All stages of this insect are still present in the field and bean-beetle damage is still noticeable. Fourth-generation beetles began emerging in the life-history cages on October 13.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

South Carolina C. O. Eddy (October 24): Hibernation of Cerotoma trifurcata is about complete at this date at Clemson College.

BEAN LEAF ROLLER (Goniurus proteus L.)

Florida F. S. Chamberlin (October 12): Bush beans are heavily infested with the leaf roller. Severe injury has occurred in several fields in Gadsden County.

CUCUMBERS

PICKLE WORM (Diaphania nitidalis Stoll.)

Indiana J. J. Davis (October 1): The pickle worm was reported abundant September 18 at Boonville.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Mississippi and Alabama K. L. Cockerham (October 27): This insect, which is usually very numerous during the late summer and fall has been conspicuously absent this year. In my work in southern Mississippi and Southern Alabama very few specimens of this insect have been noticed.

SPINACH

HAWAIIAN BEET WEBWORM (Hymenia fascialis Cramer)

Virginia P. J. Chapman (October 22): Mr. H. H. Zimmerley, Horticulturist of the Virginia Truck Experiment Station, found infestation of the Hawaiian beet webworm in a field of spinach planted September 1, 1928. This field was probably planted earlier than any in the Norfolk-Portsmouth area, and this is probably responsible for the infestation:

CARROT

CARROT RUST FLY (Psila rosae Fab.)

Massachusetts

A. I. Bourne (October 24): Professor Whitcomb reports that the carrot rust fly showed a very large amount of second-generation injury to carrots, particularly in eastern Massachusetts. Parsnips and celery apparently showed less injury than last year, although reports to date on these crops are not complete.

SWEET-POTATO

A CUTWORM (Prodenia sp.)

Florida

F. S. Chamberlin (October 13): These caterpillars are more abundant than usual in sweet-potato fields. Defoliation has been observed in several instances, in Gadsden County.

LETTUCE

CELERY LOOPER (Autographa falcifera form simplex Guen.)

Haiti

Roger C. Smith (September 25): The lettuce on the Station Farm was mined before discovered by a Plusia, probably simplex. The delicate green worms with narrow white stripes dorsally had eaten all the leaves and the crop was ruined. The worms were mature when discovered. About 1/10 of an acre of lettuce was wholly destroyed. No control other than hand picking was recommended.

S O U T H E R N F I E L D- C R O P I N S E C T S

TOBACCO

CORN EAR WORM (Heliothis obsoleta Fab.)

North Carolina

C. H. Brannon (September 1): Budworm injury to tobacco was unusually destructive this season, causing widespread damage over the tobacco sections.

TOBACCO HORNWORMS (Protoparce spp.)

North Carolina

C. H. Brannon (September 1): Hornworms, P. sexta Johan and P. quinquemaculata Haw. caused heavy damage to tobacco and was especially severe late in the season in the tobacco section.

TOBACCO BLOTCH LEAF MINER (Psara periusalis Walk.)

Haiti

Roger C. Smith (September 26): This pyralid miner Psara periusalis Walk. is the worst pest of tobacco in Haiti. The eggs are laid on the young plants in the bed. When the plants are transplanted, they look healthy and fine. The miners, however, destroy the foliage in about a week. Tobacco is being set out now, and reports of heavy losses are coming in. A company reported yesterday the loss of more than half of their plantings. The life history and control has not been worked out.

SUGARCANE

A LOOPER (Caenurgia sp.)

Haiti

Roger C. Smith (September 22): An outbreak of a species of Caenurgia, resembling erecta of the States but not that, occurred 20 acres of sugar cane, a portion of which is entirely defoliated. The cane is about 2 months behind due to burning. Scattered injury observed over several hundred acres. This insect is not in the collection and my assistants never saw it before. They are now (September 26) in the pupal stage in small cocoons made by spinning on a leaf, often turning over the edge.

First seen on a grass, Haleus halapense, where similar defoliation occurred, at the agriculture college near Port-au-Prince.

F O R E S T A N D S H A D E - T R E E I N S E C T S

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Indiana

J. J. Davis (October 1): The tussock moth has been sent in from several localities. It was reported defoliating elm at Garrett, August 31.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Indiana

J. J. Davis (October 1): The bagworm was abundant at Martinsville (September 4) and Columbus (September 5).

Kansas

J. W. McColloch (September 22): Bagworms were reported injuring cedars at Richland.

Mississippi

R. W. Harned (September 26): The common bagworm has attracted considerable attention in Mississippi during the past month. Specimens have recently been collected on linden at Holly Springs, and on arborvitae at Hernando and Clarksdale.

FALL WEBWORM (Hyphantria cunea Drury)

Massachusetts A. I. Bourne (October 24): The fall webworm throughout the State was of average abundance and caused its usual amount of injury. We noted some late feeding on fruit at harvesting, which was undoubtedly caused by these insects.

Kansas J. W. McColloch (September 25): Webs of the fall webworm were abundant in an orchard at Wellington.

Mississippi R. W. Harned (September 26): The fall webworm, Hyphantria cunea Drury, is abundant in all sections of the State at the present time.

CHAIN-SPOTTED GEOMETER (Cingilia catenaria Drury)

Maine H. B. Pierson (September 20): Ten square miles of hardwood growth in York County reported stripped by this insect which was also abundant last year.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Nebraska M. H. Swenk (September 1-October 1): Boxelder bugs were reported as becoming a nuisance by getting into the houses from September 7 on through the month, from various localities in the eastern half of Nebraska.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

Indiana J. J. Davis (October 1): The catalpa sphinx was defoliating catalpa at Lafayette and Kingman, early in September.

CEDAR

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

North Carolina C. H. Brannon (September 13): This species is causing severe damage to Cedrus deodara on the streets of Rockingham in Richmond County.

ELM

PIGEON TREMEX (Tremex columba L.)

Kansas J. W. McColloch (October 10): Tremex was taken ovipositing

in diseased elm trees at Kansas City on September 25 and at
Fulton on October 1.

OAK

RED-HUMPED OAK CATERPILLAR (Symmerista albifrons S. & A.)

Indiana

J. J. Davis (October 1): The red-humped oak worm defoliated
50 acres of oak near Crown Point, reported September 18.

PINE

WESTERN PINE BEETLE (Dendroctonus brevicomis Lec.)

California

Monthly Letter of the Bureau of Entomology, No. 173, September,
1928: J. M. Miller, F. P. Keen, and H. L. Person spent a
considerable part of the month of September on the Modoc Nation-
al Forest, Calif., working in cooperation with Forest Service
officials on a large timber sale which has been initiated in
that region. The motive of this sale, involving an entire town-
ship of Government land was based entirely on the control of
Dendroctonus brevicomis Lec., which has destroyed nearly 20
per cent of timber in that region in the last 5 years.

A SAWYER (Monochamus sp.)

South Carolina

Franklin Sherman (October 24): Following the recent storm,
numerous reports of sawyers attacking pine have been received.
It is likely that the damage from bark beetles will be increased
in this area (Clemson College) in the near future.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Ohio

E. W. Mendenhall (October 8): I find pine leaf scales on
pines in Brookville, Montgomery County, quite bad.

TULIP

TULIP TREE SCALE (Toumeyella liriodendri Gmel.)

Indiana

J. J. Davis (October 1): The tulip tree scale was reported
abundant on tulip or yellow poplar at Logansport September
7, and at Salem September 10.

WILLOW

ALDER FLEA BEETLE (Haltica bimarginata Say)

Mississippi

R. W. Harned (September 26): Beetles found feeding on willows

along the levee of the Mississippi River at Greenville, on August 2, were sent to the United States National Museum for identification, and were tentatively identified by Mr. W. S. Fisher as Haltica bimarginata.

INSECTS AFFECTING GREENHOUSE
AND ORNAMENTAL PLANTS

BLACK BLISTER BEETLE (Epicauta pennsylvanica DeG.)

Indiana J. J. Davis (October 1): The black blister beetle was destructive to flowers at Gary on September 2.

Nebraska M. H. Swenk (September 1-October 1): Growers of cultivated asters reported rather marked injury to the blossoms this fall by the black blister beetle.

MARGINED BLISTER BEETLE (Epicauta cinerea marginata Fab.)

North Carolina C. H. Brannon (September 29): This insect is causing widespread damage to flowering plants of various kinds. Severe damage to clematis at Magnolia.

PLANT BUGS (Miridae)

Massachusetts A. I. Bourne (October 24): Throughout the State as a whole, the common tarnished plant bug (Lygus pratensis Fab.) and allied species four-lined plant bug (Poecilocapsus lineatus Fab.) were found to be unusually abundant on practically all flowering shrubs in both plantings and home gardens. From reports which we have had, we have come to the conclusion that they have been more abundant than is usually the case or else have devoted their attention more particularly to this type of plants rather than more general feeding.

A CHRYSOMELID BEETLE (Calligrapha rhoda walshiana Blatch.)

Michigan R. H. Pettit (October 11): A rather unusual attack by a chrysomelid beetle on purple leaf plum was reported from Detroit on the first of October. The beetle, which proved to be Calligrapha rhoda var. walshiana Blatch., as determined by Mr. L. G. Gentner of this department, was feeding on purple leaf plum in ornamental plantings on an estate near Detroit. The beetle is generally considered to be rather rare.

ASTER

PENNSYLVANIA SOLDIER BEETLE (Chauliognathus pennsylvanicus Comst.)

Nebraska M. H. Swenk (September 1-October 1): This insect is reported injuring asters.

A PLANT BUG (Adelphocoris superbus Uhl.)

Nebraska

M. H. Swenk (September 1-October 1): This insect is reported injuring asters.

CHRYSANTHEMUM

RED SPIDER (Tetranychus telarius L.)

Ohio

E. W. Mendenhall (October 10): The chrysanthemum plants in some of the greenhouses in Columbus were attacked by the red spider Tetranychus bimaculatus.

GREENHOUSE THRIPS (Heliothrips haemorrhoidalis Bouche¹)

Ohio

E. W. Mendenhall (October 24): The chrysanthemum leaves in the greenhouses in Piqua are badly infested with Thrips haemorrhoidalis, which make the leaves look brown and will no doubt destroy the bloom.

CLEMATIS

A FLY (Napomyza lateralis Fallen)

Mississippi

R. W. Harned (September 26): Flies reared from pupae found in the flower buds of Clematis crispa at Hattiesburg, on July 28, have been identified by Mr. C. T. Greene of the United States National Museum as Napomyza lateralis.

NARCISSUS

BULB MITE (Rhizoglyphus hyacinthi Boisd.)

Ohio

E. W. Mendenhall (October 14): The bulb mite is quite bad in the narcissus bulbs at Piqua (Miami County) Ohio.

LESSER BULB FLY (Eumerus strigatus Fallen)

Ohio

E. W. Mendenhall (October 4): I find the small narcissus bulb fly quite bad in narcissus bulbs at Dayton. There are several growers in this vicinity.

ROSE OF SHARRON

LETTUCE BUG (Corizus hyalinus Fab.)

Mississippi

R. W. Harned (September 26): Specimens tentatively identified

as Corizus hyalinus by Mr. J. M. Langston were reported as very abundant on althaea plants at Brandon, on September 17.

SUNFLOWER

SUNFLOWER CATERPILAR (Suleima helianthana Riley)

Delaware

H. L. Dozier (October 31): The heads of sunflowers at Newark, were being attacked during the latter part of September by larvae of Suleima helianthana Riley. About 80 per cent of the seeds from the many flowered double variety, Helianthus flore pleno multiflora, were destroyed while the adjacent single flowered variety was not attacked.

INSECTS ATTACKING MAN AND

DOMESTIC ANIMALS

MAN

FLEAS (Siphonaptera)

General Summary F. C. Bishopp: Fleas have been unusually abundant and troublesome in many parts of the United States during the summer. In fact, these insects have caused more annoyance than for many years. The dog flea (Ctenocephalus canis Curtis) and the cat flea (Ctenocephalus felis Bouche) have been principally concerned, but infestations of the human flea (Pulex irritans L.) have also been reported, especially from the South and from central States. Although most of the trouble has occurred in dwellings, in many instances outbuildings, lawns, and general infestations of entire farmsteads have been reported.

DOG FLEA (Ctenocephalis canis Curtis)

Nebraska

M. H. Srenk (September 1-October 1): Complaints of infestations of farm premises by the dog flea continued to be received during the early part of September.

Texas

W. F. Dove (October): During the past two years several visits were made to the city dog pound of Dallas. As is customary in most cities, the dogs obtained from the streets are held in the pound for five days. At Dallas the dogs are kept in pens which are provided with sand floors. At frequent intervals sawdust is applied as a topping for the sand. During dry weather such a floor is very favorable for the development of fleas, and the latter are well supplied with eggs of the dog tapeworm Dipylidium caninum L. Examinations of the intestines of dogs furnished striking evidence of mass infestations of young stages

of this species of tapeworm.

MOSQUITOES (Culicidae)

uth Dakota

W. G. Bruce (September 23): Farmers report considerable annoyance to horses, cattle, and man due to mosquitoes, at Huron. I saw some cows covered with countless numbers of mosquitoes, the mosquitoes being located chiefly about the head and neck of the animal.

iti

Roger C. Smith (October 15): There has been a marked falling off in numbers of mosquitoes in October so far. This is the end of the rainy season. There are still one or two showers a week, however. The marked reduction in mosquitoes which occurred rather abruptly is the source of some comment. I know of no reason for this reduction.

CLUSTER FLY (Pollenia rudis Fab.)

liana

F. C. Bishopp (September 16): Cluster fly annoyance in a residence was reported from Fort Wayne.

A FLY (Psychoda albipuncta Will.)

ras

W. E. Dove (June -July): A few complaints were received on moth wing flies in houses. Apparently the flies came from the drains of bath tubs, but subsequent evidence did not confirm this belief. The use of borax, lye, and commercial preparations in the drains did not result in a marked decrease in the number of flies. Control of the flies was obtained when the brick enclosures under the house were fumigated with nitrobenzene. Specimens of the flies were identified by Dr. Dyar as Psychoda albipuncta Will.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

ssissippi

R. W. Harned (September 26): Larvae of the puss moth have attracted considerable attention in this State during the past month. In a few cases people have been severely stung by these larvae. In other cases they have been observed on pecan trees or on cotton plants. Specimens were sent to this office from Lincoln, Pontotoc, Warren, Jackson, and Lamar Counties.

CATTLE

HORN FLY (Haematobia irritans L.)

uth Dakota
and
uth Dakota

W. G. Bruce (September 23): Horn flies are causing considerable annoyance to cattle in every locality visited. At the meat packing house in Huron S. D., they have congregated in such large

numbers as to make it necessary to expend labor to clear them out of the building each evening.

Tennessee

D. C. Parman (September 14): From 25 to 1,500 horn flies were observed per animal on dairy cattle in this vicinity.

SCREEN WORM (Cochliomyia macellaria Fab.)

Tennessee

D. C. Parman (September 14): A rather severe screw worm case was observed in a sheep near Nashville. Cases of screw worms are extremely rare in this region. About 100 flies were observed on the carcass of a lamb, about 90 per cent of which were Cochliomyia, 8 per cent Phormia, and 2 per cent Lucilia.

Missouri

F. C. Bishopp (September 5): A report has been received of a screw worm outbreak near Elsberry, Mo.

CATTLE GRUBS (Hypoderma sp.)

South Dakota

W. G. Bruce (September 23): Cattle grubs have not been so numerous this year as they have been during the previous four or five years at Aberdeen. Packers report 65 per cent of the hides of cattle received during March are grubby.

At Huron the infestation is lighter this year than last. Percentage of grubby hides reported as running 40 per cent to 50 per cent in 1928 as against 75 per cent to 100 per cent in 1927.

HORSES

NOSE BOTFLY (Gastrophilus haemorrhoidalis L.)

North Dakota
and
South Dakota

W. G. Bruce (September 23): Nose flies are generally distributed and have been especially troublesome this year.

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

Texas

W. E. Dove (September 15): In southwestern Texas the flies were active. During days of sunshine the sheep were unable to graze, except when they were protected by breezes or shade trees.

GOATS

LICE (Anopleura and Mallophaga)

Texas

W. E. Dove (September 15): The Angora goats of southwestern Texas are infested with three species of lice; Linognathus

stenopsis Burmeister, Trichodectes climax Nitzsch and Trichodectes hermsi Kellog and Nakayama. These lice are capable of depositing eggs so that the mohair becomes matted and is of a poor quality. The quantity of hair actually lost as a result of the lice is one with which the ranchman is most familiar. He estimated that during each six month a single dipping of the goats increases the yield of mohair about one-fourth of a pound to each animal. This represents from 14 to 20 cents on each clipping, or from 28 to 40 cents per animal during each year.

Practically every ranch is provided with a dipping vat, but the present practise of dipping the animals does not affect a permanent control of lice. Following a single dipping, some of the eggs hatch and the infestations increase. Owing to the long period of incubation for L. stenopsis, a single dipping is less effective for this species. Since the latter is a blood-sucking form, there is a loss in weight and vitality of the animals.

DOG

BROWN DOG TICK (Rhipicephalus sanguineus Latr.)

- Florida F. C. Bishopp (September 19): Report from West Palm Beach of house infested by brown dog tick with statement that the "whole city seems to be alive with them." (September 12): Infestation of dogs reported at Miami.
- Missouri F. C. Bishopp (September 12): A house infestation of the brown dog tick is reported from St. Louis.
- Texas E. W. Laake (October 4): Report from Dallas indicates that the brown dog tick has again made its appearance and has been unusually abundant at some of the dog hospitals and kennels. In one of the local hospitals there were hundreds of ticks crawling all over the floors and walls. Even the operating room and the office were alive with nymphs and adults which had come in from the hospital ward. This same hospital was heavily infested last fall. There have also been a number of reports of heavy infestations on dogs in private homes in the city.

PIGEONS

PIGEON HIPPOBOSCID (Lynchia maura Bigot)

- South Carolina F. C. Bishopp (September 10): This parasite is reported infesting a commercial flock of pigeons in Sumter.

Mississippi

F. C. Bishopp (October 8): Owner reports finding in his flock of pigeons specimens of the pigeon fly, Lynchia maura, engorged with blood, about the time there seemed to be an abnormal number of birds dying, he believed, from weakness caused from loss of blood or bird malaria.

POULTRY

POULTRY BUG (Haematosiphon inodora Duges)

Arizona

F. C. Bishopp (September 16): An infestation of a poultry house by this bug was reported from Lowell, Ariz.

MITES (Acarina)

Texas

W. E. Dove (September 15): In southwestern Texas one finds that many ranchmen do not raise poultry. The condition is attributed to two parasites. Argas minatus Koch, and Echnidophaga gallinacea Westw. This is a serious condition, especially since these parasites are showing a gradual spread.

HOUSEHOLD AND STORED -

PRODUCT INSECTS

EUROPEAN EARWIG (Forficula auricularia L.)

California

A CORRECTION: A report from Portland Oregon mentioned this insect (Ins. P. S. B. Vol. 8, No. 7, page 289) as being widespread in California. The following statement is relative to this report:

A. H. Fleury (Calif. State Dept. Agri.) October 11: We have no knowledge of the occurrence of the European earwig in this State except in the residential sections of San Francisco, Oakland, and Berkeley, and even there it is confined to a limited number of blocks from which there is no commercial movement of oranges, tomatoes or lettuce.

TERMITES (Reticulitermes spp.)

Kansas

J. W. McColloch (October 20): During the past month damage by termites (Reticulitermes sp.) to oak woodwork has been reported from two houses in Kansas City and one house at Russell.

Nebraska

M. H. Swenk (September 1-October 1): Our common termite Reticulitermes tibialis Banks was reported as destroying

petunias, asters, and straw-flowers in a garden in southern Lancaster County during the first week in September.

ANPS (Formicidae)

Mississippi

R. W. Harned (September 26): Dr. M. R. Smith reports that a farmer living near Natchez complained that ants destroy his spinach seed at the time of sprouting. One of our inspectors who examined the garden of the farmer noted that the ill-smelling ant, Iridomyrmex analis Andre., was the most common ant in the garden. It is possible that this may be the species, but Dr. Smith is more inclined to believe the ants responsible for the damage to be a species of Solenopsis, possibly geminata or molesta.

ANT ANT (Cremastogaster ashmeadi Mayr.)

Mississippi

R. W. Harned (September 26): An employee of the Southern Bell Telephone Company at West Point, Miss., brought to this office telephone wire from which the rubber insulation had been removed. The employees claimed that ants were responsible for the damage to the wires. Specimens of ants which were found in the insulation and on the wires have been identified by Dr. M. R. Smith as acrobatic ants, probably of the species Cremastogaster ashmeadi.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

ansas

J. W. McColloch (October 20): Mohair furniture in a house at Osborne was reported infested September 28. On October 11 specimens were received from upholstered furniture in a house at Abilene.

STORED GRAIN INSECTS

ansas

J. W. McColloch (October 20): Stored grain insects have continued active during the past month in Norton, Russell, Republic, Saline, Sedgwick and Nemaha Counties. The grain weevils Calendra spp. predominate, but in some cases cadelle Tenebroides mauritanicus L., saw-toothed grain beetle Oryzaephilus surinamensis L. and confused flour beetle, Tribolium confusum Duv., are present.

Nebraska

M. H. Swenk (September 1-October 1): During the month of September reports of stored grain pests working in the new wheat were received from various parts of eastern Nebraska. Most of these related to the cadelle Tenebroides mauritanicus, but the Indian meal moth, Plodia interpunctella Hbn. was also complained of. These reports of injury to stored grain were more than normally plentiful.



THE INSECT PEST SURVEY
BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

Volume 8

Summary for 1928

Number 10

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



INTRODUCTION

The year 1928 as a whole was not one of strikingly abnormal weather conditions. January was characterized by the strong cold wave that during the first few days of the month extended from the plateau region eastward. The month as a whole, however, was above normal in temperature with the exception of the South Atlantic and Gulf coastal plains. There was a general deficiency during this month in precipitation with large areas without snow-cover. February was free from severe weather and the mild temperature continued over the greater part of the country. Precipitation remained below normal with increasingly large areas without snow-cover. These conditions prevailed during March.

April brought decided change in the weather. This month was characterized by persistent cold and frequent late killing frosts. Precipitation was abundant and very excessive in the Southeastern States. During May the temperature was uniformly above normal in the western two-thirds of the United States and below normal in the eastern third. Precipitation was generally deficient.

Very low temperature for June prevailed over the eastern two-thirds of the country. Rainfall was more frequent than during May and in many cases was very excessive. July and August were about normal. The latter month showed excessive precipitation along the Atlantic seaboard and in the upper Mississippi Valley. September will be remembered by the severe tropical hurricane that came in over eastern Florida on September 16. The temperature as a whole was below normal over the eastern two-thirds of the country. The earliest killing frosts in the past fifty years were experienced during late September in the region represented by Louisville, Ky., and Peoria, Illinois. During this month there was a widespread deficiency in precipitation. The remaining months of the year were not unusual. Coupled with these quite normal weather conditions was a year of but few striking entomological developments. Many insects were decidedly below normal and but few reached such peaks as have attracted attention in previous years.

GRASSHOPPERS

During the early months of the year a survey in the Klamath Falls district of Oregon indicated that a serious grasshopper outbreak was to be looked for in the spring. Later developments bore out this prognostication. In the Tule Lake district of California and southern Oregon grasshoppers were numerous enough to occasion extensive control campaigns. In one of these

campaigns 20,000 pounds of arsenic was used and the United States Reclamation Service expended approximately \$12,000 for materials and labor in controlling grasshoppers on their holdings. In the Great Plains region in Western Kansas and Nebraska, similar indications of serious trouble were noted very early in the season. As the season advanced the outbreak materialized and rather serious depredations were suffered. Later in the season considerable trouble was experienced over the greater part of Kansas and Missouri, and late in the fall these insects were numerous enough, particularly in the western part of their range, to threaten the newly seeded wheat and to indicate the probable occurrence of a large brood of hoppers next spring. As a whole, however, the year was not one of very serious grasshopper depredations.

MORMON CRICKET AND LUBBER GRASSHOPPER three

In the/northwesternmost counties of Colorado a very heavy outbreak of the Mormon cricket (Anabrus simplex Hald.) occurred and considerable time and money were spent in fighting this insect. The situation is so serious in this region that Federal aid is being sought for its solution. The lubber grasshopper (Brachystola magna Gir.) appeared in a very localized outbreak in northern Florida.

WHITE GRUBS

During late April and early May heavy flights of June beetles (Phyllophaga spp.) occurred in Missouri, and over the greater part of the East Central and West Central States. The flights were not, however, unusually large. On the other hand, white-grub injury was reported quite generally throughout this entire area and isolated reports were received from many points along the Atlantic seaboard. Over the greater part of the East Central States the larvae doing the principal damage were of brood A.

WIREWORMS

The year was marked as one of very severe damage by wireworms (Elateridae), involving many species and covering practically the entire country east of the Rocky Mountains. Among the species recorded during the year were Monocrepidius vespertinus Fab. from Mississippi, North Carolina, and South Carolina, Melanotus pilosus Blatch. from Nebraska, Pheletes agonus Say from Pennsylvania, Horistonotus uhleri Horn from South Carolina and Mississippi, and Hoferoderes laurentii Guer. from Alabama and Mississippi.

CUTWORMS

Injury by cutworms (Noctuidae) was less prevalent over the New England, South Atlantic, East Central, and North Central States than during 1927, with the exception of a localized outbreak in the trucking section about Chadbourn, N. C. Late in June a rather serious outbreak developed in the overflowed land in Arkansas, and in July a similar outbreak occurred on overflowed land in the north Willamette River Valley in Oregon. The pale western cutworm (Porosagrotis othogonia Morr.) occurred in threatening numbers in parts of North Dakota.



ALFALFA WEEVIL

Known distribution to September, 1928



PLAINS FALSE WIREWORM

The plains false wireworm (Eleodes opaca Say) did considerable damage in the drier parts of Kansas and New Mexico both early in the spring and on the new seedlings this fall. As a whole, however, this insect has attracted but little attention over the greater part of the semiarid dry-farming country.

ALFALFA WEEVIL

"The alfalfa weevil (Phytonomus posticus Gyll.) has been recently discovered in the following counties: Garfield County, Utah; Adams and Boise Counties, Idaho; Mesa and Garfield Counties Colorado; Lincoln, Humboldt, and Elko Counties, Nevada; and Scotts Bluff County, Nebraska. The injury inflicted by the weevil has been serious in western Nevada, northern Utah, and central Colorado. No serious injury has been reported elsewhere." (Geo. I. Reeves, Bureau of Entomology, U. S. D. A.)

LESSER CLOVER LEAF WEEVIL

Although the lesser clover leaf weevil (Phytonomus nigrirostris Fab.) was apparently as abundant as usual in Ohio and possibly above normal in Illinois, where as high as 84 per cent of the clover heads were found to be infested early in June, nevertheless as a whole but little damage was done to the hay, as the wet season produced a very succulent growth that masked the injury.

FALL ARMYWORM

The fall armyworm (Laphygma frugiperda S. & A.) became very abundant the first week in July. As the season advanced, localized outbreaks were reported from Louisiana and Mississippi. No large or extensive outbreaks developed this year.

ARMYWORM

Late in April and during May adults of the armyworm (Cirphis unipuncta Haw.) were found in rather heavy flights in parts of Illinois and Indiana. No outbreak, however, was reported later in the season from these States. Several small outbreaks were reported from Ozaukee and Manitowoc Counties, Wisconsin, and late in September a very limited brood appeared at Monticello, Ind.

HESSIAN FLY

Early spring surveys indicated that the Hessian fly (Phytophaga destructor Say) was seriously infesting wheat in the central and southern counties of Kansas and in parts of Oklahoma. Very serious injury to wheat in northeastern Virginia was also reported early in the season. Later in the season, however, the situation became more favorable and infestations in general were reported slight to moderate, with the exception of rather serious conditions in parts of Ohio and Nebraska. The midsummer survey indicated that in the East Central States infestations in general were

slight, but that in southeastern Nebraska, central Kansas, and parts of Missouri the fly would do considerable damage. Over much of this territory volunteer wheat was rank and a very considerable part of the crop was planted before the fly-free date.

WHEAT STEM MAGGOT

The wheat stem maggot (Meromyza americana Fitch) appeared in large numbers in Iowa, Nebraska, Kansas, and South Dakota, where it did considerable damage over localized areas.

CHINCH BUG

The situation as regards the chinch bug (Blissus leucopterus Say) is most encouraging. Throughout practically all of its range this insect is at a very low ebb. Slight trouble was observed on St. Augustine grass lawns in Florida and in a small wheat area in Fayette County, Texas.

GREEN BUG

Although early indications from Texas and Oklahoma presaged outbreaks of the green bug (Toxoptera graminum Rond.) no serious trouble developed. Later in the season a few reports were received from part of the green-bug territory. It seemed to occur quite generally during the early summer throughout central Kansas and Nebraska, but no serious damage was sustained. In October this insect was reported as being widely distributed and killing patches of wheat in Benton County, Missouri.

STALK BORER

Although the stalk borer (Papaipema nebris nitela Guen.) was reported from over a considerable part of the East Central and West Central States, it was much less serious than last year and undoubtedly would have attracted but little attention had it not been for the interest in corn insects occasioned by the advent of the European corn borer.

CORN BILLBUGS

Corn billbugs (Sphenophorus spp.) were unusually abundant this year in a belt extending throughout the central and western counties of Ohio into Indiana, northern Illinois, southern Iowa, and eastern Kansas. This appears to have been the worst billbug year since the organization of the Survey in 1921.

CORN EAR WORM

The year was one of almost unprecedented scarcity of the corn ear worm (Heliothis obsoleta Fab.). With the exception of a few reports very early in the season in the trucking section of the Gulf, reports from practically the entire Corn Belt and northward into the sweet corn areas indicated that but few seasons in the past could be recalled when smaller numbers of this insect were observed.

EUROPEAN CORN BORER

During 1928 the European corn borer (Pyrausta nubilalis Huebn.) in the Great Lakes district is known to have infested territory to include a strip of townships from 10 to 30 miles in width contiguous with the territory known to have been infested last year. Borers were discovered as far as the western edge of LaPorte County, Indiana, about 30 miles from the Illinois State line; to the southward as far as the southern limit of Fayette County, Ohio, about 50 miles from the Kentucky State line; to the northward into Mackinac County, Michigan; and to the eastward as far as the Connecticut River Valley in southern Vermont, Massachusetts, and northern Connecticut.

Probably due to reinfestation from neglected districts in Rhode Island, a decided increase in intensity of infestation developed in New England. The spread in this region was of little importance except in eastern and southeastern Connecticut where the borer was discovered in a total of 23 townships immediately adjoining the infested territory.

JAPANESE BEETLE

"During 1927 some evidence was obtained which indicated that the Japanese beetle (Popillia japonica Newm.) was less numerous than in previous years in the areas which have been infested for the longest time. Surveys during 1928 of the abundance of the larvae and adults were to confirm this view. The heavily infested portion of the Japanese beetle's range may be subdivided into four more or less concentric areas or zones.

"The central area, or Zone 1, includes those districts in which the species has been longest established and in which it is now undergoing a reduction in number. This includes portions of Burlington, Camden, and Gloucester Counties in New Jersey and the northern portion of Philadelphia County, adjacent to the Delaware River, in Pennsylvania.

"Surrounding the first zone is an area of 2 or 3 miles in width in which the beetle population is essentially stationary. This includes a zone in New Jersey beginning at Florence in Burlington County and extends in a sweeping curve through Mount Holly, Indian Mills, Berlin, and Sewell, and terminates in the vicinity of Paulsboro in Gloucester County. The same zone in Pennsylvania appears to be quite narrow and includes Bristol, Bustleton, Cheltenham, and the northern environs of Philadelphia.

"The third zone is somewhat more extensive than the second and includes those localities in which the beetle population has recently undergone a marked increase and now represents conditions of maximum abundance. It is limited to a series of detached areas in New Jersey which if connected would form a rather wide area outside of Zone 2. This includes Trenton, Bordentown, Williamstown, Cross Keys, Columbus, Pemberton, and Pitman, in New Jersey. In Pennsylvania it forms a more compact area embracing a series of communities extending from Somerton in Bucks County southeastward through Philmont, Rydall, Jenkintown, Glenside, Germantown, Fairmount Park, and Sharon Hill.

"The fourth zone embraces those areas into which the beetle has penetrated so recently that it has not become more than moderately established, and includes a territory averaging between 3 and 4 miles in width entirely surrounding Zone 3.

"During the season of 1928 Japanese beetles were discovered during the course of the scouting operations at the following points outside of the area under regulation: up to that time. A rather heavy infestation was located in Springfield, Mass., largely confined to two small parks in the center of the city. Slight infestations were discovered at New London, Hartford, and New Haven, Conn., the latter point being just outside the area under regulation. No new infestations were located in New York State. Slight infestations were discovered at Sayre, Lewistown, and Marysville, Pa., the latter point being just outside of the city of Harrisburg and just over the line from the regulated area. Separate infestations were discovered at 11 points in Delaware, for the most part being found in the upper half of the State. The exact points of finding were Port Penn, Middletown, Townsend, Smyrna, Clayton, Dover, Fredericka, Milford, Harrington, Wyoming, and Delmar. In Maryland slight infestations were discovered at Frederick, Hagerstown, Elkton, Perry Point, and Cambridge, and general infestations were found at Chesapeake City, Perryville, and Baltimore. General infestation was found in the city of Washington, D. C., and at Alexandria, Va., just across the line from the city.

"While there has been a reduction in the number of beetles in the central area, nevertheless injuries to fruits which were not sprayed continued to be severe. The late appearance of the beetles in 1928 enabled many growers to harvest the early ripening varieties of peaches before much loss was sustained. The damage to ornamental plants in the central area was much less evident than in 1927." (Loren B. Smith and C. H. Hadley.)

ASIATIC BEETLE

The Asiatic beetle (Anomala orientalis Waterh.) has been doing an increasing amount of damage in Connecticut and southern Long Island and at White Plains and New Rochelle, N. Y. It has also been collected at several new localities in northern New Jersey, the larvae causing complete destruction of sod on lawns and serious injury to such perennials as rose, hollyhock, iris, peony, and phlox. The larvae migrated from their winter quarters to the surface and resumed feeding about two weeks earlier than they did last year in the New Haven district, and during the summer adults were much more abundant than during any previous year.

Reports from Hawaii indicate that this pest, which at one time threatened the agriculture of those islands, has been so completely controlled by the introduction of Scolia manilae Ashm. that it is now a rare beetle on the islands.

ORIENTAL GARDEN BEETLE

"The Oriental garden beetle (Autoserica castanea Arrow) is now known to occur on Long Island and in Westchester County, New York, in northern and central New Jersey, eastern Pennsylvania to Harrisburg, and at Washington, D. C. One specimen was captured at New Haven, Conn.

During the past year this insect has caused considerable damage both as larvae and adults. The adult beetles are nocturnal and feed on a wide variety of plants including many of the ornamental plants growing in gardens on peaches and on vegetables. When the larvae become abundant in the turf they cause injury similar to that done by the Asiatic beetle.

Probably the most serious injury caused by this insect occurred in the vicinity of Douglastown, Long Island." (Loren B. Smith, Bureau of Entomology, U. S. D. A.)

APHIDS

In the Pacific Northwest the first aphids of the season were observed in Oregon on March 19. The rosy apple aphid (Anuraphis roseus Baker) in this region hatched about the middle of April. This early appearance, however, was not general, and as a whole the aphids in this region were very scarce up to the first week in May. This was true not only of the apple aphids but of those on peaches and plums. In the Bitterroot Valley of Montana late in the season the apple aphid (Aphis pomi DeG.) became unusually abundant.

Reports received from the East late in April indicated that an unusually small number of eggs had been laid last fall and subsequent reports confirmed the prognostication of a year of unusual low aphid abundance. The only exception to this condition seems to have been in the Fort Valley section of Georgia, where, in addition to the apple aphids, the rusty plum aphid (Hysteroneura setariae Thos.) was very injurious in this region and a very restricted though heavy infestation of peaches by the black peach aphid (Anuraphis persicae-niger Smith) was reported from Vienna, Va. During late May and early June aphids became decidedly more abundant in parts of Nebraska. These seem to have been the only outbreaks in a year of decidedly subnormal abundance of deciduous fruit aphids.

The spiraea aphid (Aphis spiraeicola Patch) on citrus in Florida was abnormally scarce early in the season, being less abundant than in any year since 1923. Cool, backward weather during April, however, resulted in a very rapid increase which continued through June. Heavy rains during July and the hurricane in August practically terminated this outbreak.

In California aphids started their work early in the season, attacking the new growth almost as soon as the buds broke. This led to an outbreak which necessitated very extensive spraying operations in the coastal citrus areas of southern California. Spraying and the very effective work of a syrphid fly and of an entomophthorous fungus practically eliminated this outbreak by the middle of April.

CODLING MOTH

The season as a whole was one of moderate to low abundance of the codling moth (Carpocapsa pomonella L.). Unfavorable weather conditions occasioned a winter mortality in the northern part of the eastern fruit belt that ran as high as 50 per cent of the overwintering larvae in central Illinois. Throughout the greater part of the East the season was decidedly late, the first pupa having been observed from a week to 10 days later than last year. This late emergence resulted in a reduction in the blossom injury and an increase in the side-worm injury. As a whole there was less damage this year than has been the case during the past two or three years over the greater part of the East. In the walnut-growing section of southern California the codling moth is evidently becoming an increasingly important pest.

ORIENTAL FRUIT MOTH

Along the Atlantic seaboard the oriental fruit moth (Laspeyresia molesta Busck) was less troublesome than last year. It emerged from hibernation considerably later than last year in the Georgia fruit belt. In the most recently infested area of southern Indiana and Illinois it has proved extremely destructive this year, at many points practically all of the fruit having been infested. In New Jersey the parasite Macrocentrus ancylivora Roh. is proving to be a very efficient agent in reducing infestations. This year, in the southern half of New Jersey, from 50 to 60 per cent of the larvae were parasitized. The accompanying map indicates the distribution of this insect thus far recorded. The doubtful records in Missouri and Arkansas are seriously questioned by the entomologists in these States and the records in Michigan are not at all certain, but the Dallas, Texas, record is from authentically determined material.

SAN JOSE SCALE

Throughout the entire eastern fruit areas the San Jose Scale (Aspidiotus perniciosus Comst.) has been decidedly below normal in abundance this year. Very high winter mortality was reported from the East Central States, running as high as 60 to 70 per cent in southern Illinois and approximately that high in southern Indiana. The emergence of "crawlers" was also late as compared with previous years.

EASTERN TENT CATERPILLAR

This has not been a year of abundance for the eastern tent caterpillar (Malacosoma americana Fab.). Reports, as usual, were received from practically the entire eastern part of the United States; but they indicated "spotted" infestations with no general or excessive abundance. Parasitism appears to have been somewhat higher in the New England region than was the case last year.

PLUM CURCULIO

Throughout the southern part of the Atlantic States the plum curculio (Conotrachelus nenuphar Hbst.) was about three weeks later than usual, producing in that region but a single generation. In the northern part of that area it emerged at about the normal date. As the season advanced this insect was observed to be subnormally abundant throughout the greater part of the Eastern States. Unfavorable weather conditions, however in the Georgia fruit belt so interfered with effective spraying that by October an unusually heavy infestation had been built up.

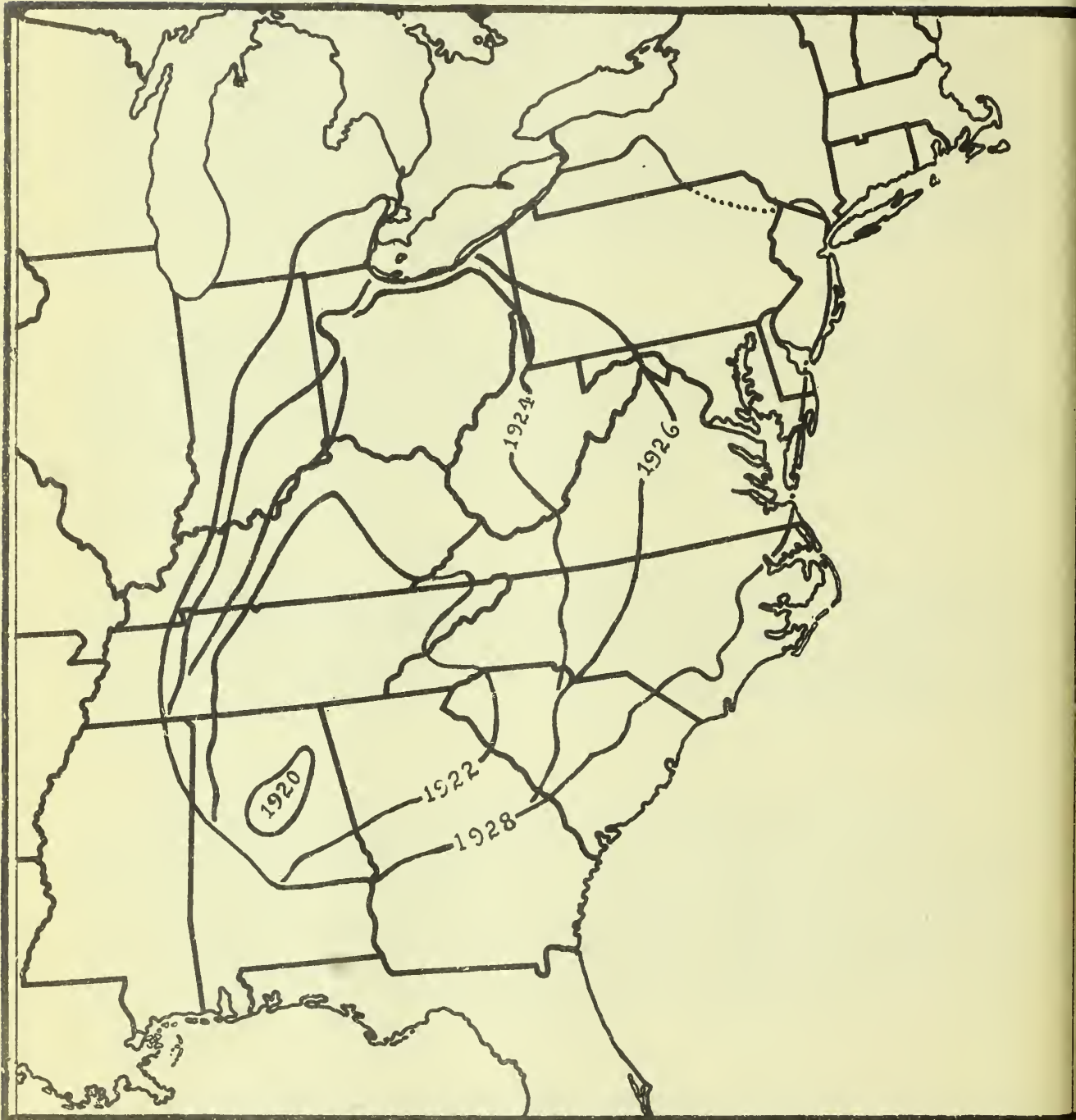
PEACH BORER

Infestations of the peach borer (Aegeria exitiosa Say) were apparent heavier than usual in the Georgia fruit belt this year. The moths emerged decidedly later than last year in that district, and were collected on October 11 whereas usually the last individuals are seen on or before October 1. The late emergence extended westward across southern Illinois.



MEXICAN BEAN BEETLE

Spread by two-year periods from 1920-1928



EUROPEAN RED MITE

The European red mite (Paratetranychus pilosus Can. & Fanz.) was not so troublesome this year over the Northeastern States as it has been the last few years. However, infestations were reported from practically all of the Northeastern States westward to Ohio.

CITROPHILUS MEALYBUG *

The citrophilus mealybug (Pseudococcus gahani Green) was decidedly less prevalent in the southern California citrus district than was the case last year. This is believed to be due in part to the systematic liberation of the predacious beetle Cryptolaemus montrouzieri Muls. A rather unusual condition was observed this year in Los Angeles County, for the mealybugs were found entering the apical opening of figs and developing within the fruit. Should this become an established habit of this insect it would have a very important bearing on the production of California figs, as fruit containing mealybugs would be difficult to detect by an external examination.

Another entomological factor that is beginning to affect the fig industry is fig endosepsis, which is now known to be carried by the Blastophaga, an insect which is absolutely essential to the production of Smyrna figs.

WALNUT FLY

In 1918 A. I. Fabis, of the Bureau of Entomology, collected several weevils on walnuts at Brownwood and Pecan Bayou, Tex. This material was sent to the National Museum and later determined as Rhagoletis juglandis, described in 1919 by Cresson. The type material was collected in the Huachuca Mountains of Arizona on English walnut. In 1921 Dr. Hine sent in specimens collected at Manhattan, Kans. These were determined by Dr. Aldrich and returned. F. E. Brooks, in U. S. D. A. Bul. 992, says: "Rhagoletis juglandis Cress. has been recorded as attacking the nuts of Juglans rupestris and J. regia in Arizona and Texas." During the past two or three seasons English walnuts near Chinon on the Los Angeles - San Bernardino County line have been under suspicion of infestation by a husk maggot. This year specimens were sent to the National Museum and determined as this species.

RASPBERRY FRUIT WORM

"The raspberry fruit worm (Byturus unicolor Say) caused considerable damage in Washington again during 1928, especially to loganberries. It is known locally as the loganberry worm. The following counties in Washington had severe infestations: Pierce, King, Snohomish, Skagit, and Whatcom. I believe the damage was fully as serious as it was during 1927. In the vicinity of Mt. Vernon loganberry growers have been pulling out their vines because of their inability to dispose of the berries owing to the presence of the worms." (R. L. Webster, Washington State College.)

*ERRATUM-No 6, p. 224. Under Citrophilus mealybug. Following "H. M. Armistage in Charge of Insectary Operations" read "the Cryptolaemus beetles (C. montrouzieri Muls.) have been distributed over 8,000 acres of citrus to aid in the control of the citrophilus mealybug."

RASPBERRY SAWFLY

Throughout the raspberry section extending from New York into Ontario the raspberry sawfly (Monophadnoides rubi Harr.) did very considerable damage this year.

PEA APHID

"The infestation of the pea aphid (Illinoia pisi Kalt.) during 1928 on canning peas in Wisconsin was about normal. The peak of infestation (on July 7) was reached more quickly than in any of the past five years and in number of aphids in the fields was second only to the peak of 1925 which showed 1,860 aphids per 5 sweeps of a collecting net as compared with 1,517 collected this year. After the peak was reached, the infestation dropped more quickly than usual.

"The weather for this season was unusual. ^{and} It was cool and rainy with much cloudy weather during May and June/a few warm periods of one day's duration. A definite change occurred on July 3 to warm, generally clear weather with cool nights, continuing with a few short exceptions throughout July. During May, June, and July it rained on 41 days with a total rainfall of 10.26 inches. Of this precipitation, 6.26 inches fell during the 16-day period from June 18 to July 3 inclusive. Only 0.23 inch fell in July after the third day. The definite change in weather on July 3 appeared to check the growth of peas and hasten maturity, which resulted in early and uneven maturity and general poor quality. The excellent growth condition of the vines in late June appeared to accelerate aphid reproduction remarkably. Then reproduction almost ceased and aphids began to disappear rapidly." (J. E. Dudley, Jr., Bureau of Entomology, U. S. D. A.)

Early in the season the pea aphid destroyed considerable alfalfa in the West Central, North Central, and Great Basin areas.

COLORADO POTATO BEETLE

The Colorado potato beetle (Leptinotarsa decemlineata Say) was reported very early in the season as being unusually abundant in the Gulf region at Birmingham, Ala., Picayune, Lucedale, and Tupelo, Miss., and around Jacksonville, Fla., and later in the season there were indications that it would be extremely destructive in the Virginia trucking sections. Throughout the country as a whole conditions were not unusual.

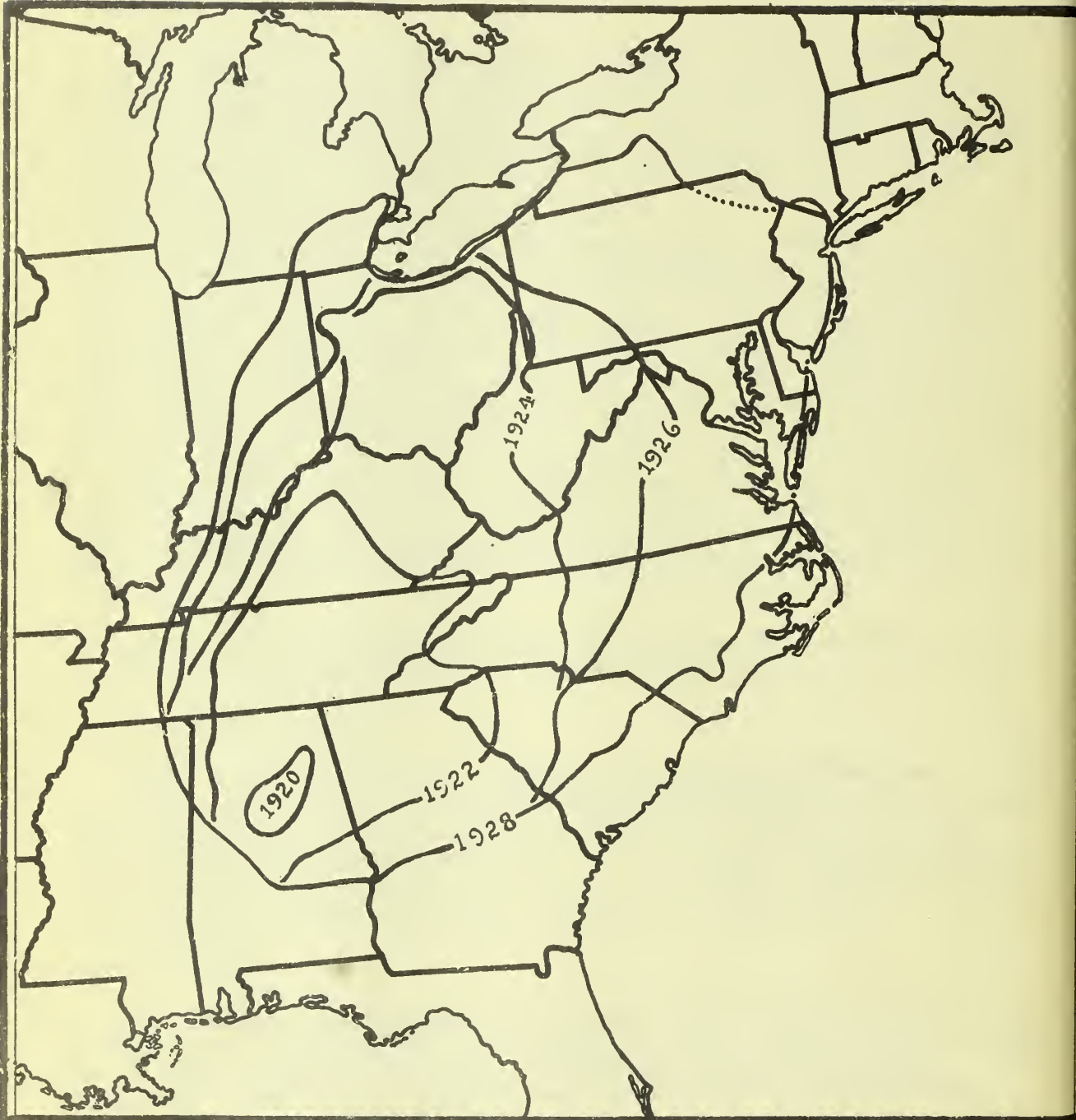
HARLEQUIN BUG

The harlequin bug (Murgantia histrionica Hahn) was less numerous throughout the greater part of its range than during 1927. However, considerable damage was done in the early trucking sections of Alabama and Mississippi, and in North Carolina conditions seemed to be worse than usual. This insect appeared this year to be much more numerous in Alexandria County, Virginia, than it has been in many years.



MEXICAN BEAN BEETLE

Spread by two-year periods from 1920-1928



MEXICAN BEAN BEETLE

Although early indications were that the Mexican bean beetle (Epilachna corrupta Muls.) would be subnormally abundant in the originally infested areas in Alabama because of low winter survival, subsequent conditions offset the winter loss. The first adults appeared in Alabama 13 days later than last year. Surveys made late in the season indicated that this insect has advanced eastward about two tiers of counties in western New York State over the known distribution of last year and has entered the southeastern part of the State in Orange and Rockland Counties. It is recorded for the first time this year from the greater part of New Jersey, Delaware, and Maryland. In North Carolina this insect has reached the coast and in Indiana it has reached the northeasternmost corner of the State and has crossed over into Branch and Ingham Counties, Michigan. The extension of territory southward and westward has been negligible. (Largely compiled from monthly reports of N. F. Howard, Bureau of Entomology, U. S. D. A.)

ASPARAGUS BEETLES

Asparagus beetles (Crioceris spp.) are normally abundant throughout the Northeastern and East Central States and appear to be spreading slowly southward and more rapidly westward into Iowa and southern Illinois. This year Crioceris asparagi L. was reported as destructive in Ames, Muscatine, and Des Moines, Iowa, and as far south as Carbondale, Ill.

SEED CORN MAGGOT

During the last week in March the seed corn maggot (Hylemyia cilicrura Rond.) was reported as doing serious damage to winter truck in Mississippi. Late in April considerable damage was being reported from parts of Kansas. During July rather serious injury was reported to truck crops in the Lake region of New York State, and this insect appeared for the first time in five years as a serious onion pest in Wisconsin.

SWEET-POTATO WEEVIL

" The sweet-potato weevil (Cylas formicarius Fab.) in southern Mississippi and southern Alabama at this date appears to be under the best control of any period since the inception of the campaign of control and eradication.

" During the past two years actual loss to the sweet-potato crop has been negligible. The area which has previously been found infested has not increased and a considerable reduction in number of infestations has been secured.

" In Pearl River County, Mississippi, the infested area which has been under constant supervision, has apparently been completely cleaned up. All of the farms in this area, so far as known, are free from weevils. However, ten new farms in an area 14 miles northwest of the Picayune area have just recently been found to be infested with this insect. These infestations are believed to have resulted from weevils having been trans-

ported from Louisiana, across the river, to these properties. In Hancock County, Mississippi, at present only five farms are known to be infested with weevils, whereas almost 200 had previously been infested.

"In Mobile County, Alabama, only eight properties have been found infested in the 1928 crop, while more than 100 farms were infested previously. In Baldwin County, Alabama, where approximately 70 farms were once infested no weevils were found during 1928." (K. L. Cockerham, Bureau of Entomology, U. S. D. A.)

SOD WEBWORM

About the middle of May sod webworms (Crambus spp.) were reported from central Indiana and were damaging corn in parts of Iowa. During June reports of considerable damage to corn, in some cases requiring replanting, were reported from Ohio, the greater part of Indiana, and Illinois. In the last-named State they were said to be more serious than in many years. Reports of less extensive injury were received from Wisconsin, southern Iowa, and Nebraska.

BEET LEAFHOPPER

"During the season of 1928 the beet leafhopper (Eutettix tenellus Baker) was abundant in Utah, and curly-top was correspondingly prevalent. The severity of the damage varied greatly in different areas, Cache Valley and Utah County suffering, in general, only moderate damage, while some areas suffered considerable loss. Because of the serious loss from curly-top in past years, no beets were planted at Cache Junction, Grantsville, Leamington, Lynndyl, McCormick, and Mills, and many localities planted a smaller acreage than has been customary. Shortage of irrigation water and lack of summer rains were contributing factors to the reduced beet tonnage and to the pronounced curly-top symptoms." (G. F. Knowlton, Utah Agr. Exp. Sta.).

VEGETABLE WEEVIL

"The vegetable weevil (Listroderes obliquus Gyll.) has continued to move northward but its progress in spreading the past year has not been so rapid as in some former years. The weevil is now known to occur in 7 counties in Alabama, 8 parishes in Louisiana, 2 counties in Florida, and 40 counties in Mississippi. It is possible that the distribution is larger than here given, since it has been possible to do only a limited amount of scouting. The weevil was found in larger numbers during the summer months the past year than ever before, with the exception of some isolated localities along the coast where it was less plentiful than last year." (M. M. High, Bureau of Entomology, U. S. D. A.)

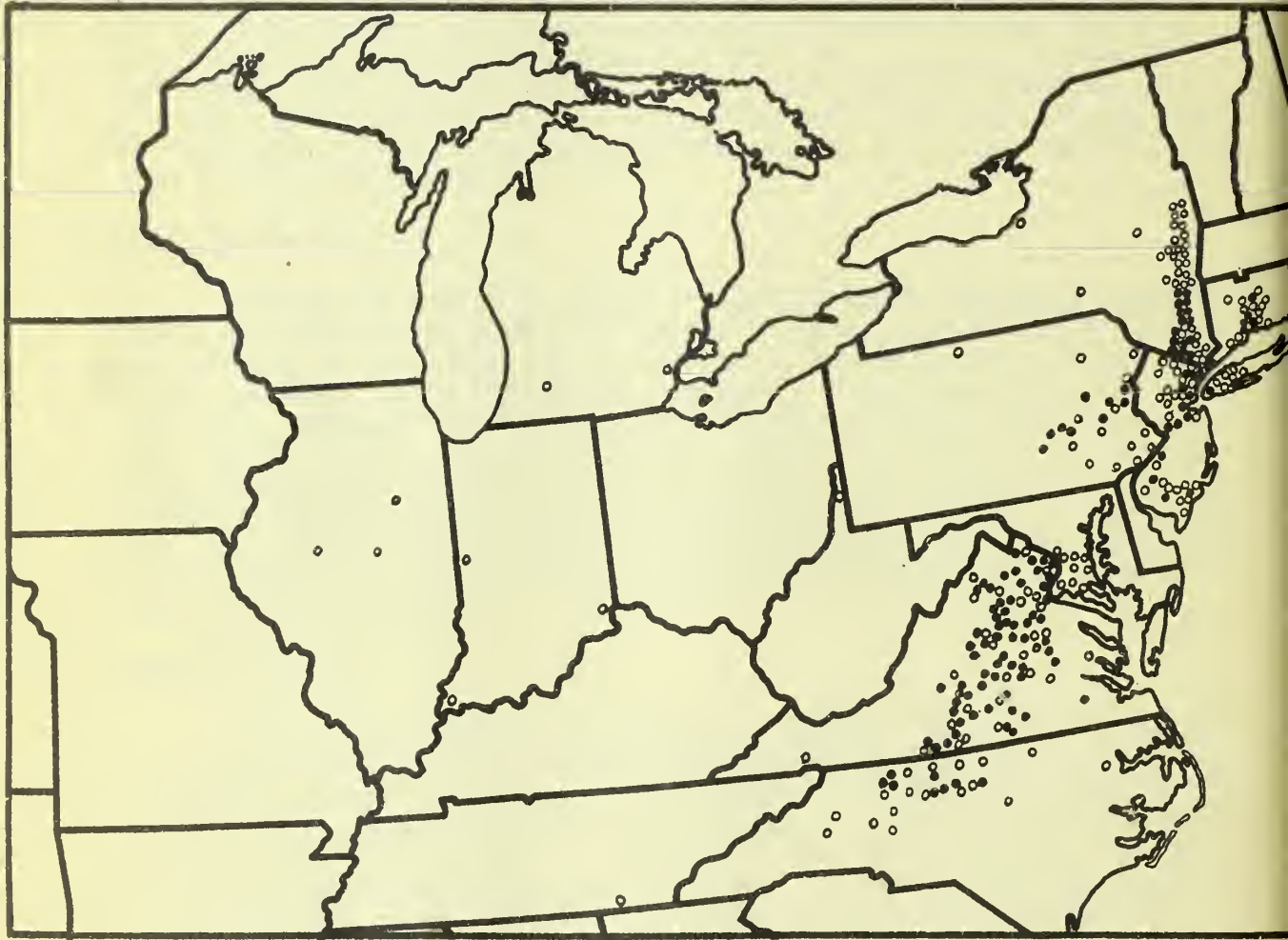
VELVET BEAN CATERPILLAR

The velvet bean caterpillar (Anticarsia gemmatilis Hbn.) was reported for the first time as a primary pest of peanuts, in Florida. It



PERIODICAL CICADA

Known distribution of Brood II up to and including its appearance in 1928.



Black dots indicate 1928 records

usually moves into peanut fields from infested velvet-bean fields after the latter have been harvested.

SOUTHERN ARMYWORM

A very heavy outbreak of the southern armyworm (Prodenia eridania Cram.), covering practically all of the Florida peninsula and the greater part of Georgia, North Carolina, and South Carolina, occurred this year. In addition to defoliating its native food plants it did much damage to castor bean, sweet potato, okra, tomato, pepper, and ornamental plants. This is the heaviest outbreak of this insect that has occurred since 1917.

SUGARCANE BORER

"Infestations of the sugarcane borer (Diatraea saccharalis Fab.) in Louisiana in 1928 were irregular and in most cases low. The percentage of bored stalks in individual fields examined varied from 3.5 to 98, with an average infestation of 27.5 per cent. It is necessary to go back to 1919 to find a year of similar low infestation. Examinations made in October as compared with those made in August show that often the damage mounted rapidly in the last part of the growing season. This was especially marked in sugarcane fields near corn fields, as the borer matures quickly and in large numbers in corn stalks, the resulting moths migrating to sugarcane fields when the corn stalks complete their growth and dry out." (W. E. Haley, Bureau of Entomology, U. S. D. A.)

EARLY RICE PLUTS.

Early in the spring of this year larvae of Chilo simplex Butl. were found infesting rice plants near Honolulu, T. H., and by the end of May between 1,500 and 2,000 acres of rice were known to be infested, all confined to the Island of Oahu. This insect was first noted by Chinese growers in October, 1927. An idea of the severity of the infestation may be had from an examination made of two stools of rice collected in a heavily infested paddy. From these two stools between 40 and 50 moths emerged.

PERIODICAL CICADA (Brood II and Brood XXVII)

During the year 1928 the large Brood II of this insect (Tibicina septendecim L.) put in its appearance along the Atlantic Seaboard. This brood extends from west-central North Carolina along the Appalachian foothills and the piedmont and coastal plains sections across eastern Maryland, southeastern Pennsylvania, New Jersey, southeastern New York, and western Connecticut. A few doubtful records of the appearance of this brood have been made in the past outside of the territory named, one in Posey County, Indiana, one in Kalamazoo County, Michigan, and three from as many localities in Illinois. Not one of these scattered records has been verified by appearance in 1928, and it is highly probable that they are either the result of misdeterminations or of the appearance of accelerated individuals of Brood III, which appears in the Middle West the year after Brood II appears in the East.

Over the lower Mississippi Valley, occupying almost exactly the territory not occupied by the 17-year race of the periodical cicada, occur a 13-year race. The appearance of this race every 13 years led to very considerable confusion of the broods in the early studies of the insect, made when all the broods were thought to be of 17-year occurrence. Of this 13-year race a very small and doubtful Brood XXVII is recorded by C. L. Marlatt (Bul. 71, Bur. Ent., p. 75) from Franklin County, Miss. This brood was first observed in 1902, and again in 1915 in the same county. In each case but few specimens were seen. In the latter year a few specimens were observed at Lake Chicot, Chicot County, and Helena, Phillips County, Ark. This year the only report received of this brood was a single specimen taken in a boll-weevil emergence cage at Yazoo City, Yazoo County, Miss. The only brood of any size from which this specimen could have been retarded is Brood XXVIII, which occurred in 1924. A retardation of four years is hardly in keeping with our general theory as to the appearance of these broods. These emergences are more easily accounted for by assuming that they are the last survivors of a disappearing brood that once flourished in that region before the advent of the white man.

The following list of localities, arranged by States and counties, is intended to be a complete record of all observations on the appearance of Brood II.

Connecticut

Fairfield; Hartford, Avon 1911, Berlin 1911, Bristol 1894, East Berlin 1894, Farmington 1877, 1894, and 1911, Hartford 1894, New Britain 1894, 1911, and 1928, Plainville 1894 and 1911, Rocky Hill 1911, Southington 1911 and 1928, West Hartford 1911, Windsor 1894; Litchfield; Middlesex, Cromwell 1911, Durham 1860, 1877, 1894, and 1911, Higganum 1894, Killingworth 1911, Middlefield 1894 and 1911, Middletown 1894 and 1911, Westfield 1894; New Haven, Branford 1894, 1911, and 1928, Cheshire 1911 and 1928, East Haven 1894 and 1911, Guilford 1894, 1911, and 1928, Hamden 1911 and 1928, Meriden 1877, 1894, 1911, and 1928, Mount Carmel 1894, New Haven 1894, 1911, and 1928, North Branford 1894, 1911, and 1928, North Guilford 1894, North Haven 1911 and 1928, Reeds Gap 1894, Wallingford 1894, 1911, and 1928, Woodbridge 1928.

District of Columbia

Hope Hill 1894, Naval Observatory 1894, Rock Creek Zoological Park 1894.

Illinois

De Witt, Clinton 1911; Livingston, Fairbury 1894; Mason 1877.

Indiana

Dearborn; Fountain, Silverwood 1911; Posey, Mount Vernon 1894.

Maryland

Anne Arundel 1894; Near head of South River 1928; Calvert; Charles, Hughesville 1911, Popes Creek 1911; Montgomery, Glen Echo 1911; Prince Georges, Seat Pleasant 1894, Westwood 1894; Saint Marys,

Michigan

Kalamazoo; Wayne, Detroit (Woodmere Cemetery) 1894.

New Jersey

Atlantic, Atlantic City 1894, Bargaintown 1928, Egg Harbor City 1894, Hammonton 1894, Landisville 1877, Mays Landing 1860, Somers Point 1860; Bergen, Allendale 1894, Closter 1928, Fort Lee 1911, Glen Rock 1928, Highwood 1911, Hohokus 1894, Mahwah 1894, Maywood 1894, Midland Park 1877 and 1894, Park Ridge 1894, Ridgewood 1894, Waldwick 1894, Wortendyke 1894; Burlington, Moorestown 1894 and 1928; Camden, Camden 1894; Cape May, Woodbine 1894; Cumberland, Vineland 1894 and 1928; Essex, Avendale 1894, Bloomfield 1894, Hilton 1877 and 1894, Maplewood 1928, Montclair 1894, Newark 1877 and 1894, New Brooklyn 1894, Orange 1877, 1894, and 1911, South Orange 1877 and 1894, Upper Montclair 1928; Gloucester, Franklinville 1894, Glassboro 1928, Newfield 1877 and 1894; Hudson, Bayonne 1894; Mercer, Princeton 1928; Middlesex 1894, Carters 1928, New Brunswick 1877 and 1928; Monmouth, Matawan 1860; Morris, Budd Lake 1894, Gillette 1894, Morristown 1809, 1826, 1843, 1860, 1877, and 1894; Passaic, Hawthorne 1894, Midvale 1894, Passaic 1894, Paterson 1894, Pompton 1894; Salem 1894; Somerset; Basking Ridge 1894, Middlebush 1860 and 1877; Sussex, Franklin 1894, Hamburg 1894; Union, Elizabeth (town) 1741, 1758, 1775, 1792, and 1877, Netherwood 1894, Plainfield 1860, 1894, and 1928, Roselle 1877 and 1894, Scotch Plains 1928, Springfield 1894 and 1928, Summit 1911, Westfield 1894 and 1928.

New York

Albany, Albany 1860, Berne 1894, Bethlem Center 1894, Clarksville 1911, Coeymans 1911, Dunnsville 1911, Feura Bush 1911, Kenwood 1911, Menands 1911, New Scotland 1894, Normansville 1911, Ravena 1911, Voorheesville 1894; Bronx, West Farms 1860, 1877, and 1894; Chenango, Greene 1894; Columbia 1928, Claverak 1911, Ghent 1911, Hillsdale (Kopake Falls) 1911, Kinderhook 1911, Niverville 1911, North Chatham 1911, North Germantown 1911, Stuyvesant Falls 1911, Stockport 1911, West Taghkanic 1911; Dutchess, Annandale 1911 and 1928, Arlington 1911 and 1928, Bangall 1911, Barrytown 1894, 1911, and 1928, Camelot 1911, Chelsea 1911, Dutchess Junction 1911, Fishkill Landing 1911, Hyde Park 1911, New Hamburg 1911 and 1928, Poughkeepsie 1911 and 1928, Pleasant Valley 1928, Red Hook 1911, Rhinebeck 1928, Rhinecliff 1911, Staatsburg 1911, Tivoli 1894, 1911, and 1928; Greene, 1928, Alsen 1911, Athens 1911, Cairo 1911, Catskill 1894, East Durham 1894, Greenville 1843, Leeds 1911, Morrison Hill 1911, New Baltimore Station 1911, West Athens 1911, West Coxsackie 1911; Kings, Brooklyn (Prospect Park)

1894, Flatbush 1928; Montgomery, Fonda 1877, 1894, and 1911; Nassau, Garden City 1911; New York, Bronx 1911, (Central Park) 1894, Fort Schuyler 1911, Morris Park 1894; Orange, Balmville 1911 and 1928, Bear Mountain Park 1928, Bellvale 1928, Bodine's Bridge 1911, Campbell Hall 1894, Cornwall 1894, 1911, and 1928, Craigsville 1928, Crystal Run 1928, East Valley 1928, Edenville 1928, Fort Montgomery 1911, Goshen 1911 and 1928, Greenwood Lake 1928, Hamptonburg 1928, Highland Falls 1911 and 1928, Leptondale 1911, Little Britain 1928, Middlehope 1911 and 1928, Middletown 1894 and 1911, Monroe 1928, Mountainville 1911 and 1928, Newburgh 1911 and 1928, New Windsor 1843, 1860, 1877, 1894, and 1928, Pine Hill 1928, Pine Island 1928, Rock Tavern 1928, Roseton 1928, Sloatsburg 1928, Sugar Loaf 1928, Tuxedo Park 1928, Vail Gate 1928, Waldan 1928, Warwick 1894, 1911, and 1928, Washingtonville 1928, West Point 1877, 1894, 1911, and 1928, Woodbury 1928; Oswego, Oswego 1894; Putnam, Cold Spring 1860, 1877, and 1911, Garrison 1911, Storm King 1911; Queens 1758 and 1894; Bensselaer, Bath-on-the-Hudson 1894, Castleton 1911, East Greenbush 1877 and 1911, East Schodack 1911, Elliot's Station 1877, 1894, and 1911, Lansingburg 1911, Maple Beach Park 1911, Nassau 1911, Reynolds 1911, Schaghticoke 1911, Schodack Center 1911, Troy 1894; Richmond 1877, Greatkills 1911 and 1928, Rossville 1911, South Beach 1894, Tottenville 1928, West New Brighton 1911; Rockland, Haverstraw 1911 and 1928, Iona Island 1911, Nyack 1894, 1911, and 1928, Spring Valley 1877 and 1894, Suffern 1911, Tallman 1894, Walley Cottage 1928; Saratoga, Mechanicville 1911, Schuylerville 1911, Stillwater 1911; Suffolk, Huntington 1894, Wyandanch 1911; Sullivan, Livingston Manor 1877; Ulster, Clintondale 1911, Ellenville 1894 and 1911, Esopus 1911, Highland 1911 and 1928, Kingston 1894 and 1928, Lake Minnewaska 1894, Malden 1911, Marlboro 1911 and 1928, Milton 1894, 1911, and 1928, New Paltz 1911 and 1928, Fort Ewen 1911, Saugerties 1843, 1860, 1877, 1894, and 1911, Wallkill 1911, West Camp 1911; Washington, Easton 1894, Thomson 1877 and 1911; Westchester 1877, Baychester 1894, Bronxville 1894, Croton 1911, Dobbs Ferry 1911, Katonah 1911, Lowerre Summit 1911, Mount Vernon 1911, New Rochelle 1894, 1911, and 1928, Ossining 1911, Park Hill 1911, Peekskill 1894 and 1911, Pelham 1894 and 1911, Pelhamville? 1894, Scarborough 1894 and 1911, Tarrytown 1911.

North Carolina

Alamance, Burlington 1894 and 1928, Haw River 1928; Bertie?; Burke, Morganton 1894; Caldwell, Yadkin Valley 1877; Caswell 1894; Davie, Farmington 1894; Forsyth 1928, Craters 1894, Salem Chapel 1894; Granville 1843, 1860, and (northeastern part) 1894; Guilford, Greensboro 1928, Guilford 1928, Guilford College 1894, New Garden? 1877; Iredell, Elmwood 1894; Orange, Hillsboro 1928, Rock Spring 1894; Rockingham, Leaksville 1894, Wentworth 1928; Rowan, Salisbury 1894; Stokes, Saxon 1877 and 1894; Surry, Boyden 1894, Copeland 1928, Dobson 1894 and 1928, Fairview 1928, Pilot Mountain 1928, Rockford 1928; Wake; Warren (southeastern corner) 1894; Yadkin 1894 and 1928.

Pennsylvania

Berks, Hamburg 1894; Bucks; Carbon 1877, Palmerton 1928; Chester;

Dauphin, Dauphin 1928, Williamstown 1928; Delaware; Lancaster 1928; Lebanon; Lehigh, New Tripoli 1928; Luzerne, Hazleton 1923; Monroe 1877, Saylorsburg 1928, Strausburg 1911; Montgomery; Northampton, Windgap 1928, Youngs 1894; Philadelphia; Pike 1877; Potter, Shinglehouse 1894; Schuylkill, Minersville 1860, 1877, and 1894, Pine Grove 1894 and 1928, Pitman 1928; Wyoming.

Tennessee

Hamilton, Chattanooga 1860 and 1894.

Virginia

Alexandria (Ind. City) 1928; Albemarle 1911, Charlottesville 1894, Ivy 1894 and 1928, Moormans River 1928, Proffit 1928, Rio 1894; Amherst 1809, 1826, 1843, 1860, 1877, 1911, Madison Heights 1928, Sandiges 1894; Appomattox 1911, Evergreen 1928; Arlington, Barcroft 1911, Cherrydale 1928, Clarendon 1911 and 1928, Fort Myer 1928, Four Mile Run 1894, Halls Hill 1894, Lyon Park 1928, Rosslyn 1928; Bedford, Big Island 1894 and 1928; Buckingham, Buckingham 1894 and 1928, Dillwyn 1928, New Canton 1928; Campbell Altavista 1928, Brookneal 1928, Concord Depot 1928, Fairview Station 1928, Kew 1894, Lawyers 1928, Lynchburg 1911 and 1928; Caroline, Golansville 1894; Charlotte, Charlotte C. H. 1928, Redoak 1911; Chesterfield, Bon Air 1911; Culpeper, Carlin (Spring) 1894, Culpeper 1894 and 1928; Cumberland 1877, Cartersville 1928, Tally 1911; Fairfax, Accotink 1928, Fairfax 1928, Mount Vernon 1860; Fauquier, Catlett 1860, 1877, and 1894, Markham 1928, The Plains 1928, Warrenton 1911 and 1928; Fluvanna 1894, Bremo Bluff 1928; Goochland 1860, 1877, and 1894, Sandy Hook 1928; Hanover, Ashland 1928, Hewlett 1894, Montpelier 1928, Oliver 1894; Henrico 1911, Richmond 1877, 1894, and 1928; Henry 1894, Axton 1928, Martinsville 1928, Preston 1860 and 1877; James City, Toana 1877 and 1894; Loudoun, Aldie 1928, Hamilton 1928, Leesburg 1877 and 1894; Louisa, Buckner 1928, Louisa 1894 and 1928; Lunenburg, Kenbridge 1928, Meherrin 1928, Oral Oaks 1826, 1843, 1860, 1877, and 1894; Madison, Brightwood 1928, Madison 1928, Nethers 1928, Pratts 1928; Mecklenburg, Boydton 1911 and 1928, Chase City 1911 and 1928; Nelson, Afton 1928, Faber 1928; Orange, Gordonsville 1911 and 1928, Montpelier 1928, Orange 1911 and 1928, Somerset 1928; Page, Kimball 1928, Luray 1928, Massanutton 1843; 1860, 1877, and 1894, Rileyville 1928; Pittsylvania, Chatham 1928, Danville 1860, 1877, and 1911, Elba 1896, Galveston 1860, 1877, and 1894, Gretna 1928, Pittston 1843, 1860, 1877, and 1894, Whitmell 1928; Powhatan, Jefferson 1894 and 1928, Powhatan 1928, Subletts 1877 and 1894; Prince Edward, 1843, 1860, 1877, and 1894, Hampden Sidney 1928, Rice 1928; Prince William, Quantico 1928; Rappahannock, Flint Hill 1928, Woodville 1894; Shenandoah, Seven Fountains 1911; Spotsylvania, Chancellor 1928, Fredericksburg 1928, Massaponax 1928, Spotsylvania 1860, 1877, 1894, and 1928; Stafford, Berea 1894, Falmouth 1911 and 1928, Leland 1911, Tackett Mills 1860, 1877, and 1894; Sussex, Wakefield, 1928; Washington, Abingdon 1894.

West Virginia

Brooke, Wellsburg 1894.

WHITE-MARKED TUSSOCK MOTH

The white-marked tussock moth (Hemerocampa leucostigma S. & A.) was not reported as abnormally abundant from any considerable area throughout its range. However, an interesting record came from Bangor, Maine, where it was quite conspicuous for the first time in a number of years.

BAGWORM

The situation as regards the bagworm (Thyridopteryx ephemeraeformis Haw.) in the Mississippi Valley and the East Central States has not materially changed from last year. This insect is still apparently on the increase in Ohio. Parasitism seems to be increasing in Missouri and in the remainder of the territory the infestations remain about the same as last year. Serious damage was reported from South Carolina this year.

GIPSY MOTH

"The project of exterminating the gipsy moth (Porthetria dispar L.) in New Jersey has been continued by the State of New Jersey in cooperation with the Federal Government. The area requiring treatment has been greatly reduced and the intensity of the infestation decreased from over 3,000,000 egg clusters to less than 100 egg clusters. No defoliation or damage to trees has occurred in New Jersey since the first summer's (1920) work and there is every prospect that finally this infestation will be exterminated.

Since the establishment of the barrier zone in eastern New York and western New England in 1923 and 1924 the gipsy moth conditions within the zone have gradually improved as a result of the intensive work which has been carried on by the Conservation Commission of the State of New York and by the United States Department of Agriculture. A statement of the conditions east of the zone is not so encouraging, for this insect has gradually increased in abundance since 1924, when it caused a smaller amount of defoliation than at any time for approximately twenty years. Since then the acreage defoliated in New England has increased from about 800 acres to over 262,000 acres during the summer of 1928. In addition to this great increase in abundance it has spread toward the barrier zone and several serious infestations are present between the eastern boundary of the zone and the Connecticut River. This has necessitated a change in the quarantine regulations on account of the gipsy moth and several towns have been added to the area designated as generally infested. Under the present conditions the problem of keeping the barrier zone clean and free of infestations is a most difficult one, and unless the heaviest infestations between the Connecticut River and the eastern boundary of the zone are treated, the zone itself will become reinfested." (A. F. Burgess, Bureau of Entomology, U.S. D. A.)

BROWN-TAIL MOTH

"The situation with regard to the brown-tail moth (Nyemia phaeorrhoea Donovan) has remained about the same for several years, but there has been a slight increase in abundance in parts of Massachusetts during the past year.

It has not been abundant over most of the infested area but in several towns severe defoliation of neglected apple orchards has occurred." (A. F. Burgess, Bureau of Entomology, U. S. D. A.)

ORIENTAL MOTH

"The oriental moth (Cnidocampa flavescens Walk.) was abundant during the summer in several localities in the suburbs of Boston. No intensive work to determine the dispersion of this insect was done by the Federal forces, but occasional observations showed no great amount of spread. It was reported during the summer causing damage in several towns, including Winthrop, Everett, and Weymouth, and was observed as far north as Saugus and Salem." (A. F. Burgess, Bureau of Entomology, U. S. D. A.)

SATIN MOTH

During the past season the satin moth (Stilpnotia salicis L.) has made extensive advances along the periphery of the infested area. It has advanced northeastward into Penobscot County, Maine, westward to the eastern border of Vermont in Windsor and Windham Counties, to within one county of the western border of Massachusetts, and half way across the State of Connecticut. Last year this insect extended as far west as Nashua, N. H., Leominster, Mass., and Providence, R. I. Poplar and willow trees were severely defoliated in a large part of the infested territory.

BARK BEETLES

"The epidemics of the western pine beetle (Dendroctonus brevicornis Led.) which in 1927 reached unprecedented proportions in southern Oregon and northeastern California, show a marked decline this year. On a large area in northeastern California centering around the Modoc National Forest this insect destroyed approximately 1 per cent of the stand in 1921. The infestation gradually increased until in 1927 about 3½ per cent was destroyed. Practically 10 per cent of the volume of timber on the surveyed area, or roughly some 500,000,000 board feet, was destroyed. Our surveys in the summer of 1928 show that the losses will be less this year than in any year since 1921. The exact figures on the extent of the decline are not yet available.

"The infestation of the mountain pine beetle (Dendroctonus monticolae Hopk.) in lodgepole pine, which has been progressing southward along the Continental Divide since 1909, has for the past two years been centered on the Bitterroot National Forest of Montana. The control project initiated by the Forest Service in the Bighole Basin in an attempt to keep this epidemic from spreading to the east side of the Continental Divide and into the Madison, Gallatin, and Targhee National Forests will have to be abandoned. The beetles have continued to spread into the zone of defense in such numbers that the attempt to check their advance is hopeless.

"An epidemic of the Black Hills Beetle (Dendroctonus ponderosae Hopk.) on the Colorado National Forest has completely subsided owing to the effective control measures carried out.

"Outbreaks of the southern pine beetle (Dendroctonus frontalis Zimm.) in the Southeast this year have been extremely rare, as is usual in years of normal precipitation." (F. C. Craighead, Bureau of Entomology, U. S. D. A.)

GREAT BASIN TENT CATERPILLAR

"A widespread epidemic of the Great Basin Tent caterpillar (Malacosoma fragilis Stretch) occurred during the past summer on the eastern slopes of the Sierra and Cascade Mountains. Over thousands of square miles the shrubby vegetation was completely stripped, thus destroying the usual browse of sheep grazed in this area and in many cases causing serious losses in revenue in grazing fees and in money expended in the purchase of supplementary feed for the animals." (F. C. Craighead, Bureau of Entomology, U. S. D. A.)

SPRUCE BUDWORM

"The spruce budworm (Harmoloba fumiferana Clem.) has been especially destructive along the Shoshone River just east of Yellowstone National Park on an area of over 100,000 acres and on the Santa Fe National Forest in New Mexico. In the southwestern corner of Yellowstone National Park along the Bechler River over an area involving many square miles the lodgepole pine has been completely stripped by the spruce budworm. Although this insect has been recorded from pine before, such an extensive defoliation is unique." (F. C. Craighead, Bureau of Entomology, U. S. D. A.)

PHLEBATROPHIA MATHESONI MACGIL.

"A new birch leaf miner (Phlebatrophia mathesoni MacGil.) has been unusually abundant throughout portions of Maine during the past summer. This insect is more in evidence than it has been in any previous year and has attracted a great deal of comment." (F. C. Craighead, Bureau of Entomology, U. S. D. A.)

This insect was originally described by MacGillivray in 1909 from numbers of female larvae collected in New Glasgow, Nova Scotia.

TERMITES

"Termites have continued their serious damage to the woodwork of buildings in the Southeastern, Gulf, Central Western, and Southwestern States, as well as in California. The Bureau's recommendations for the inclusion of certain provisions for prevention of termite damage in the mandatory section of city building codes are receiving favorable consideration in all sections of the country, but the actual adoption of these suggestions, involving the modification of city building codes, will take many years to put into effect." (F. C. Craighead, Bureau of Entomology, U. S. D. A.)

THE INSECT PEST SURVEY
BULLETIN

A periodical review of entomological conditions throughout the United States
issued on the first of each month from March to December, inclusive.

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1928

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AGENCIES COOPERATING

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Oat thrips	<i>Anaphothrips striatus</i> Ort.
Oblique-banded leaf roller a.n.o.	<i>Cacoecia rosaceana</i> Harr.
Onion maggot a.n.o.	<i>Hylemyia antiqua</i> Meig.
Onion thrips a.n.o.	<i>Thrips tabaci</i> L.
Orange tortrix	<i>Tortrix citrana</i> Fern.
Oriental fruit moth	<i>Laspeyresia molesta</i> Busck
Oriental garden beetle	<i>Autoserica castanea</i> Arrow
Oriental moth a.n.o.	<i>Cnidocampa flavescens</i> Walk.
Oyster-shell scale a.n.o.	<i>Lepidosaphes ulmi</i> L.
Pacific red spider	<i>Tetranychus pacificus</i> McGregor
Pale-marked ash borer	<i>Eburia quadrigeminata</i> Say
Pale western cutworm a.n.o.	<i>Porosagrotis orthogonia</i> Morr.
Pea aphid a.n.o.	<i>Illinoia pisi</i> Kalt.
Peach and plum slug	<i>Eriocampoides amygdalina</i> Boh.
Peach bark beetle a.n.o.	<i>Phthorophloeus liminaris</i> Harr.
Peach borer a.n.o.	<i>Aegeria exitiosa</i> Say
Peach twig borer a.n.o.	<i>Anarsia lineatella</i> Zell.
Pear leaf blister mite	<i>Eriophyes pyri</i> Pgst.
Pear midge a.n.o.	<i>Contarinia pyrivora</i> Riley
Pear psylla a.n.o.	<i>Psyllia pyricola</i> Foerst.
Pear slug a.n.o.	<i>Eriocampoides limacina</i> Retz.
Pear thrips a.n.o.	<i>Taeniothrips inconsequens</i> Uzel
Pecan budmoth	<i>Proteopteryx bolliana</i> Sling.
Pecan cigar case bearer	<i>Coleophora caryaefoliella</i> Clem.
Pecan leaf case bearer	<i>Acrobasis nebulella</i> Riley
Pecan nut case bearer a.n.o.	<i>Acrobasis caryae</i> Grote
Pecan sesia	<i>Sesia scitula</i> Harr.
Pecan weevil a.n.o.	<i>Balaninus caryae</i> Horn
Pennsylvania soldier beetle	<i>Chauliognathus pennsylvanicus</i> Comst.
Pepper weevil a.n.o.	<i>Anthonomus eugenii</i> Cano
Periodical cicada a.n.o.	<i>Tibicina septendecim</i> L.
Pickle worm a.n.o.	<i>Diaphania nitidalis</i> Stoll
Pigeon hippoboscid	<i>Lynchia maura</i> Bigot
Pigeon tremex a.n.o.	<i>Tremex columba</i> L.
Pine bark aphid	<i>Chermes pinicorticis</i> Fitch

Pine leaf miner	<i>Paralechia pinifoliella</i> Chamb.
Pine leaf scale	<i>Chionaspis pinifoliae</i> Fitch
Pine scale	<i>Toumeyella pinicola</i> Ferris
Pink boll worm a.n.o.	<i>Pectinophora gossypiella</i> Saund.
Pistol case bearer a.n.o.	<i>Coleophora malivorella</i> Riley
Plains false wireworm a.n.o.	<i>Eleodes opaca</i> Say
Plum curculio a.n.o.	<i>Conotrachelus nenuphar</i> Hbst.
Poplar borer a.n.o.	<i>Saperda calcarata</i> Say
Potato aphid a.n.o.	<i>Illinoia solanifolii</i> Ashm.
Potato flea beetle a.n.o.	<i>Epitrix cucumeris</i> Harr.
Potato leafhopper	<i>Empoasca fabae</i> Harr.
Potato psyllid	<i>Paratrioza cockerelli</i> Sulz.
Potato stalk borer a.n.o.	<i>Trichobaris trinitata</i> Say
Potato stem borer	<i>Gortyna micacia</i> Esp.
Potato tuber worm a.n.o.	<i>Phthorimaea operculella</i> Zell.
Poultry bug a.n.o.	<i>Haematosiphon inodora</i> Duges
Purple scale a.n.o.	<i>Lepidosaphes beckii</i> Newm.
Puss caterpillar	<i>Megalopyge opercularis</i> S. & A.
Putnam's scale a.n.o.	<i>Aspidiotus ancylus</i> Putn.
Quince curculio a.n.o.	<i>Conotrachelus crataegi</i> Walsh
Raspberry cane borer a.n.o.	<i>Oberea bimaculata</i> Oliv.
Raspberry fruit worm a.n.o.	<i>Byturus unicolor</i> Say
Raspberry sawfly a.n.o.	<i>Monophadnoides rubi</i> Harr.
Rat mite	<i>Liponyssus bacoti</i> Hirst
Red-backed cutworm a.n.o.	<i>Euxoa ochrogaster</i> Guen.
Red-banded leaf roller	<i>Eulia velutinana</i> Walk.
Red-headed flea beetle	<i>Systema pallicornis</i> Schffr.
Red-headed pine sawfly a.n.o.	<i>Neodiprion lecontei</i> Fitch
Red-humped oak caterpillar	<i>Symmerista albifrons</i> S. & A.
Red-shouldered shot-hole borer	<i>Xylobiops basilare</i> Say
Red spider	<i>Tetranychus telarius</i> L.
Rhododendron lacebug a.n.o.	<i>Stephanitis rhododendri</i> Horv.
Rice moth	<i>Corcyra cephalonica</i> Staint.
Roadside grasshopper. See	Clear-winged grasshopper
Rose chafer a.n.o.	<i>Macroductylus subspinosus</i> Fab.
Rose leaf beetle	<i>Nodonota puncticollis</i> Say
Rose leafhopper a.n.o.	<i>Empoa rosae</i> L.
Rose sawfly a.n.o.	<i>Caliroa aethiops</i> Fab.
Rose scale a.n.o.	<i>Aulacaspis rosae</i> Bouche'
Rosy apple aphid a.n.o.	<i>Anuraphis roseus</i> Baker
Round-headed apple tree borer a.n.o.	<i>Saperda candida</i> Fab.
Rusty plum aphid a.n.o.	<i>Hysteroneura setariae</i> Thos.
Saddle-back caterpillar a.n.o.	<i>Sibine stimulea</i> Clem.
Salt-marsh caterpillar a.n.o.	<i>Estigmene acraea</i> Drury
Sand wireworm a.n.o.	<i>Horistonotus uhleri</i> Horn
San Jose scale a.n.o.	<i>Aspidiotus perniciosus</i> Comst.
Satin moth a.n.o.	<i>Stilpnotia salicis</i> L.
Saw-toothed grain beetle a.n.o.	<i>Oryzaephilus surinamensis</i> L.
Say's blister beetle	<i>Pomphopoea sayi</i> Lec.
Screw worm a.n.o.	<i>Cochliomyia macellaria</i> Fab.
Scurfy scale a.n.o.	<i>Chionaspis furfura</i> Fitch
Seed corn maggot a.n.o.	<i>Hylemyia cilicrura</i> Rond.

Semitropical armyworm ... See	Southern armyworm
Serpentine leaf miner a.n.o.	<i>Agromyza pusilla</i> Meig.
Sheep botfly a.n.o.	<i>Oestrus ovis</i> L.
Sheep tick a.n.o.	<i>Melophagus ovinus</i> L.
Short-nosed ox louse	<i>Haematopinus eury sternus</i> Nitz.
Short-tailed cricket	<i>Anurogryllus muticus</i> DeG.
Shot-hole borer a.n.o.	<i>Scolytus rugulosus</i> Ratz.
Silver fish a.n.o.	<i>Lepisma saccharina</i> L.
Sinuate pear tree borer a.n.o.	<i>Agrilus sinuatus</i> Oliv.
Six-spotted leafhopper a.n.o.	<i>Cicadula sexnotata</i> Fallen
Smartweed borer	<i>Pyrausta ainsliei</i> Heinr.
Snowball aphid	<i>Aphis viburnicola</i> Gill.
Snowy tree cricket a.n.o.	<i>Oecanthus niveus</i> DeG.
Sorghum webworm a.n.o.	<i>Celama sorghiella</i> Riley
Southern armyworm a.n.o.	<i>Prodenia eridania</i> Cram.
Southern pine beetle a.n.o.	<i>Dendroctonus frontalis</i> Zimm.
Spinach leaf miner	<i>Pegomya hyoscyami</i> Panz.
Spindle worm	<i>Achatodes zeae</i> Harr.
Spiraea aphid	<i>Aphis spiraeicola</i> Patch
Spotted asparagus beetle a.n.o.	<i>Crioceris duodecimpunctata</i> L.
Spotted beet webworm	<i>Hymenia perspectalis</i> Hbn.
Spotted cucumber beetle a.n.o.	<i>Diabrotica duodecimpunctata</i> Fab.
Spring canker worm a.n.o.	<i>Paleacrita vernata</i> Peck
Spruce bud scale	<i>Physokermes piceae</i> Schr.
Spruce budworm a.n.o.	<i>Harmologa fumiferana</i> Clem.
Spruce gall aphid	<i>Chermes abietis</i> Kalt.
Spruce mite	<i>Paratetranychus uniunguis</i> Jacoby
Spruce sawfly a.n.o.	<i>Neodiprion abietis</i> Harr.
Squash beetle a.n.o.	<i>Epilachna borealis</i> Fab.
Squash borer a.n.o.	<i>Melittia satyriniformis</i> Hbn.
Squash bug a.n.o.	<i>Anasa tristis</i> DeG.
Stable fly a.n.o.	<i>Stomoxys calcitrans</i> L.
Stalk borer a.n.o.	<i>Papaipema nebris nitela</i> Guen.
Sticktight flea a.n.o.	<i>Echidnophaga gallinacea</i> Westw.
Strawberry crown borer a.n.o.	<i>Tylosderma fragariae</i> Riley
Strawberry leaf roller a.n.o.	<i>Ancylis comptana</i> Froel.
Strawberry root aphid a.n.o.	<i>Aphis forbesi</i> Weed
Strawberry root weevil	<i>Brachyrhinus ovatus</i> L.
Strawberry root worm a.n.o.	<i>Paria canella</i> Fab.
Strawberry weevil a.n.o.	<i>Anthonomus signatus</i> Say
Striped blister beetle a.n.o.	<i>Epicauta vittata</i> Fab.
Striped cucumber beetle a.n.o.	<i>Diabrotica vittata</i> Fab.
Striped flea beetle	<i>Phyllotreta vittata</i> Fab.
Sugar beet root maggot	<i>Tetanops aldrichi</i> Hendel
Sugarcane beetle a.n.o.	<i>Euetheola rugiceps</i> Lec.
Sugarcane borer a.n.o.	<i>Diatraea saccharalis</i> Fab.
Sugarcane leafhopper	<i>Perkinsiella saccharicida</i> Kirk.
Sugarcane leaf roller	<i>Omiodes accepta</i> Butl.
Sweet-potato flea beetle a.n.o.	<i>Chaetocnema confinis</i> Crotch
Sweet-potato leaf beetle	<i>Typophorus viridicyaneus</i> Crotch
Sweet-potato weevil a.n.o.	<i>Cylas formicarius</i> Fab.
Sycamore leaf roller	<i>Ancylis platanana</i> Clem.

Tarnished plant bug a.n.o.	<i>Lygus pratensis</i> L.
Three-cornered alfalfa hopper.....	<i>Stictocephala festina</i> Say
Three-lined potato beetle a.n.o.	<i>Lema trilineata</i> Oliv.
Tile-horned prionus	<i>Prionus imbricornis</i> L.
Tip moth	<i>Peronea variana</i> Fern.
Tobacco blotch leaf miner	<i>Psara periusalis</i> Walk.
Tobacco budworm	<i>Heliothis virescens</i> Fab.
Tobacco flea beetle a.n.o.	<i>Epitrix parvula</i> Fab.
Tobacco thrips	<i>Frankliniella fusca</i> Hinds
Tobacco wireworm	<i>Monocrepidius vespertinus</i> Fab.
Tobacco worm a.n.o.	<i>Protoparce quinquemaculata</i> Haw.
Tomato worm a.n.o.	<i>Protoparce sexta</i> Johan.
Tropical cattle tick	<i>Margaropus annulatus australis</i> Full.
Tropical fowl mite	<i>Liponyssus bursa</i> Berlese
Tulip tree scale	<i>Toumeyella liriodendri</i> Gmel.
Turnip aphid a.n.o.	<i>Rhopalosiphum pseudobrassicæ</i> Davis
Two-lined prominent	<i>Hemerocampa bilineata</i> Pack.
Variegated cutworm a.n.o.	<i>Lycophotia margaritosa saucia</i> Hbn.
Vegetable weevil a.n.o.	<i>Listroderes obliquus</i> Gyll.
Velvet bean caterpillar	<i>Anticarsia gemmatilis</i> Hbn.
Walnut aphid	<i>Chromaphis juglandicola</i> Kalt.
Walnut caterpillar a.n.o.	<i>Datana integerrima</i> G. & R.
Walnut fly	<i>Rhagoletis juglandis</i> Cress.
Walnut husk maggot See	Walnut fly
Walnut scale a.n.o.	<i>Aspidiotus juglans-regiæ</i> Comst.
Webbing clothes moth a.n.o.	<i>Tineola biselliella</i> Hum.
Western garden flea beetle	<i>Phyllotreta pusilla</i> Horn
Western pine beetle a.n.o.	<i>Dendroctonus brevicornis</i> Lec.
Western spotted cucumber beetle a.n.o.	<i>Diabrotica soror</i> Lec.
Wheat head armyworm a.n.o.	<i>Neluncania albilinea</i> Hbn.
Wheat joint worm a.n.o.	<i>Harmolita tritici</i> Fitch
Wheat-sheath gall joint worm	<i>Harmolita vaginicola</i> Doane
Wheat stem maggot a.n.o.	<i>Meromyza americana</i> Fitch
Wheat stem sawfly a.n.o.	<i>Cephus cinctus</i> Nort.
Wheat wireworm a.n.o.	<i>Agriotes mancus</i> Say
White-marked tussock moth a.n.o.	<i>Hemerocampa leucostigma</i> S. & A.
White peach scale a.n.o.	<i>Aulacaspis pentagona</i> Targ.
Willow curculio	<i>Cryptorhynchus lapathi</i> L.
Willow leaf beetle	<i>Galerucella decora</i> Say
Woolly alder aphid a.n.o.	<i>Prociphilus tessellatus</i> Fitch
Woolly apple aphid a.n.o.	<i>Eriosoma lanigerum</i> Hausm.
Woolly elm aphid a.n.o.	<i>Eriosoma americanum</i> Riley
Yellow ant	<i>Lasius interjectus</i> Mayr
Yellow-necked caterpillar a.n.o.	<i>Datana ministra</i> Drury
Yellow woolly bear a.n.o.	<i>Diacrisia virginica</i> Fab.
Zebra caterpillar a.n.o.	<i>Mamestra picta</i> Harr.





