

THE INSECT PEST SURVEY BULLETIN.

A monthly review of entomological conditions throughout the United States.

Volume 1.

July 1, 1921.

Number 3.

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

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OUTSTANDING ENTOMOLOGICAL FEATURES OF JUNE 1921.

The chinch bug situation continues to loom up as the most serious entomological situation in Indiana, southern Illinois, Missouri, northwestern corner of Ohio and northern Texas.

The Hessian fly situation is not generally as serious as anticipated. However, it is still a serious problem in Indiana and Missouri, while severe damage is reported from parts of North Carolina. A very general infestation but not serious in intensity is reported from Nebraska with a slight local outbreak in Oregon.

The most serious outbreaks of cutworm in the Upper Mississippi Valley are reported from North Dakota, Nebraska and Iowa; the outbreaks being complicated by the number of species involved.

An outbreak of the fall army-worm in Alabama may be the forerunner of a series of outbreaks in the Mississippi Valley.

The greater wheat stem maggot has developed a serious outbreak in Oregon and this insect is also reported as being decidedly on the increase in destructiveness in Illinois and Nebraska.

For the first time in the history of the State Entomological Service the pea aphid is occurring in serious numbers in Colorado. It is also reported as being unusually numerous in Nebraska.

Though a heavy brood of white grub is due this year; as yet no heavy outbreaks have been reported.

Grasshoppers are very serious in southwestern Iowa, northwestern Minnesota, parts of South Dakota, southern Nebraska and parts of Oregon, while a serious outbreak in Wisconsin is reported as being the worst since 1890.

Among the fruit insects the rose chafer is reported as being much more numerous than usual in New York, Massachusetts, Connecticut, Ohio and Indiana. Damage to grapes being the most conspicuous injury reported.

Heavy infestations of vineyards by the grape leaf hopper are reported from Columbia and Orange Counties, New York. This pest is also unusually abundant in Ohio and Nebraska.

West Virginia reports the plum curculio as worse this year than ever before, while Missouri reports the worst outbreak since 1906. It is also occurring in rather unusual numbers in Massachusetts, Connecticut, parts of New York, Delaware and Indiana.

The brown plum aphid is occurring in serious numbers in Missouri, Indiana and Georgia, while the mealy plum aphid is reported as being very serious in the Sacramento Valley in California.

In some of the raspberry districts in New York State the industry is being discontinued owing to the loss occasioned by the raspberry fruit worm.

The green apple aphid has developed so serious an outbreak in central New York that some nurseries are employing large numbers of additional men to control this pest.

In the Hood River Valley, Oregon, the fruit tree leaf roller is becoming an extremely destructive pest. Reports of serious injury are also being received from New York State.

Pear psylla is so serious in parts of New York as to occasion an extra emergency spraying for its control. Pear midge is also more destructive than it has been for many years in parts of New York.

The black peach aphid is occurring in serious numbers in Nebraska for the first time as far as the Experiment Station records go. It is so serious that trees are dying from the attack of this insect. It is also appearing as a serious pest for the first time in Washington State.

The Colorado potato beetle is appearing in large numbers from Long Island southward through New Jersey and Delaware, while outbreaks much more serious than originally anticipated are reported from Ohio, Wisconsin and Nebraska. The potato flea beetle is occurring as a serious pest in New York, New Jersey and Delaware.

The most serious outbreak of cabbage maggot that has occurred in recent years is under-way in southern New York State. This insect is also appearing in destructive numbers in Massachusetts, Ohio, northern Indiana and Oregon.

The rapid increase in the area determined as infested by the Mexican bean beetle in Georgia, Kentucky and Tennessee seems to indicate that a heavy fall migration of this insect took place late last season.

A serious outbreak of the fall webworm is reported from Louisiana. Present reports indicate that the extent of the outbreak ranges from Baton Rouge to New Orleans.

Serious losses in the calf crop are being occasioned by a bad outbreak of screw-worm in parts of Texas.

I N S E C T P E S T S U R V E Y B U L L E T I N

Vol. 1

July 1, 1921.

No. 3

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

W H E A T

CHINCH BUG (Blissus leucopterus Say)

- West Virginia W. E. Rumsey (May 23). "We have received no reports concerning chinch bugs in West Virginia this year."
- Georgia A. C. Lewis (June 7). "The wheat is now being cut, and to date we have not received any complaint of these insects. So far as we know they are not present in Georgia."
- Ohio H. A. Gossard (June 15). "As far as our present records go the chinch bug is only present in serious numbers in the northwestern corner of the State, northwest of a line running diagonally from the southwestern to the north-central boundaries of Paulding County, across the center of Defiance County, thence including all of Williams County with the exception of the southeastern corner, to the north-central part of Poulton County, affecting, in all, four counties."
- H. A. Gossard (June 23). "Young chinch bugs are reported quite numerous in Paulding County and Van Wert County. I have not yet heard from Defiance and Williams Counties farther to the north."
- Indiana J. J. Davis (June 10). "The chinch bug continues to loom up as a pest of great importance. Wheat harvest began in the southern end of Indiana on this date. Bugs are abundant in all sections previously reported." (June 15) "Indications still are that this insect will be a serious pest this summer."
- Illinois W. O. Davis (June 7). "Chinch bugs are more abundant than usual in Saline County."
- W. P. Flint (June 17). "In a number of counties small areas of oats have been killed. In a few cases in the southern half of the State entire fields of 10 to 15 acres of oats have been destroyed. Young chinch bugs observed mainly in the second and third instars. Many corn-fields in the infested areas are severely damaged where volunteer wheat was plowed for corn. Creosote barriers being used generally." (June 18) Chinch bug is less abundant in the area most heavily infested last year,

and much more abundant in the area slightly infested last year. Bugs are now in the second and third instars. The old bugs are dying rapidly. Eumicrosoma benefica is abundant."

Edward L. Dillon (June 17). "Chinch bugs are now found at the base of 90 per cent of the cornstalks examined near wheat or oat fields at Waverly. Wheat harvest has begun."

- Nebraska M. H. Swenk (June 15). "The chinch bug appeared during latter May in plentiful numbers in the wheat fields of the counties along the Kansas line, from Pawnee County westward, but no serious injury has been reported."
- Missouri L. A. Haseman. "Mr. Burrill has made a survey of the chinch bug situation in this State and reports that about 65 to 70 per cent of the counties in the State are known to be infested this summer. The outbreak last year covered a section in the east-central part of the State, extending east of a semicircular line which started on the north in central Marion County, extended westward to the western third of Gallaway County, southward to the northern third of Iron County, and ended in the central part of Perry County. All counties have been heard from with the exception of three and only about eleven report no infestation this year."
- Alabama W. E. Hinds (June 2). "We have no complaint at all of chinch bugs this season; in fact, the species has never been common enough to be sent in here, during the fourteen years that I have been in the State. I think it does occur sometimes in northern Alabama but have never heard of it in any other section of the State."
- Texas M. C. Tanquary (June 18). "Reported as being very destructive in Hill County."

HESSIAN FLY (Phytophaga destructor Say)

- New York G. E. Smith (June 11). "Causing some loss this year but apparently not very numerous in Orleans County." (June 18) "Mostly in the flaxseed stage, considerable injury found in several fields; wheat harvest will start about July 4 or two weeks earlier than usual."
- North Carolina Franklin Sherman (May). "Crop reporters in Piedmont (west-central section) have reported this insect as destructive in several counties but only a few such reports have come direct to me. I judge it to be somewhat more destructive than usual."

A. C. Foster (letter to R. J. Haskell, Plant Disease Survey, June 23). In Buncombe County I covered a large area inspecting wheat fields. The general opinion of the growers and county agents was that the wheat crop this year was the poorest they had seen in years, due partly to unfavorable weather conditions but mostly to damage done by the leaf rust and Hessian fly. In Wilkes County also the wheat crop was very poor, being caused by the unfavorable weather, the fly, and the rust.

- Indiana J. J. Davis (June 15). "The Hessian fly is abundant as reported in last letter, and fallen wheat is being noted in all sections. Farmers in some sections are cutting as early as possible, hoping to eliminate a portion of the losses due to late fallen wheat."
- Ohio T. H. Parks. "Greatly decreased as compared with 1920; only a few fields are visibly damaged. Infestation in the central counties will be near 10 per cent of the straw; this represents what survived of the late wave, or eggs which were deposited during the middle of October."
- H. A. Gossard (June 23). In most counties Hessian fly is nominally present and in those counties where the infestation runs higher than 10 to 15 per cent the percentage of parasitism is very high, generally in the neighborhood of 80 and 90 per cent.
- Minnesota C. N. Ainslie (May 24). "Quite a number of winter wheat fields were examined carefully but I could find no trace of Hessian fly in any of them."
- Wisconsin C. L. Fluke (June 8). Hessian fly is rare in Wisconsin but is more common than usual at Richland Center.
- Nebraska Myron H. Swenk (May 15). "Hessian fly is widely distributed in for the most part small and nondestructive numbers over southeastern Nebraska. In Washington County, however, this pest is present in decidedly injurious abundance, and some injury is being done in the extreme southeastern corner of the State also."
- Missouri L. Haseman (May 12). "In central Missouri they are now largely in the flaxseed stage, with as many as 40 odd flaxseed to a single tiller in some cases. (June 15) "A State-wide survey is being made which is not yet completed. Percentage infestation in the several counties is being worked out, but this is not yet completed. Practically the entire State with the exception of a small area along the northern border and about 15 counties in the south-central part of the State is infested."
- Oregon L. P. Rockwood (June 1). "Heavy infestation of spring and winter wheat at Pleasant Hill apparently due to favorable local conditions and the practice of planting wheat on wheat. The second spring generation were on the wing about June 1. Infestation ranging from nothing to 40 per cent."
- A. L. Lovett (June 17). Generally below average in abundance. Adults active June 1.

PALE WESTERN CUTWORM (Porosagrotis orthogonia Morr.)

- North Dakota C. N. Ainslie (June 4). "Several experiments with poisoned bran have been tried out at Beach without any marked success. Possibly the fact that several species may be present prevents these trials having the value they might possess, if they were contending only with Porosagrotis orthogonia. One reliable farmer told me yesterday of finding 17 cutworms in a space of one square foot in his field. In most cornfields I found one to 5 cutworms in every hill of very young corn."

WESTERN ARMY CUTWORM (Euxoa auxiliaris Grote)

Nebraska M. H. Swenk (May 15). "The most important insect outbreak during the month covered in this report has been one of the western army cutworm. These cutworms were more or less active during early April, but reports of injury were not received until April 20. Wheat and alfalfa were the crops injured and the reports of injury were from very widely separated localities (Scottsbluff County in the extreme western part of Nebraska, Phelps County in south-central, and Madison County in northeastern Nebraska). In Phelps County the injury was principally in the winter wheat, one field of which had 25 acres completely eaten off by April 22; in Madison County the injury was chiefly in alfalfa fields and for two weeks the young alfalfa leaves were eaten as fast as they came out. Poisoned bran mash bait was used effectively in all the outbreaks. The worms matured and entered the ground for pupation by May 1." (June 15) "Following the outbreak of the western army cutworm referred to above there was a heavy flight of the moths of this species during later May and early June. The moths began to fly in small numbers about the middle of May, but the flights did not become heavy until the week beginning May 22. During the latter part of that week and all of the following week the extreme abundance of these moths caused much comment. During the week of June 5 to 11 the numbers of these moths began diminishing rapidly and at the present time they are not present in conspicuous numbers. The area covered by this heavy flight of moths was that portion of the State lying East of the 98th meridian north of the Platte River, while south of the Platte River heavy flights were noted west of the 100th meridian and beyond. The flights were heaviest in the southeastern counties."

Iowa F. A. Fenton (May 31). "Moths of this insect are appearing in western and southern counties in this State by the millions. The infested region lies west of a line running from the northwestern corner of Dickinson County to the middle of Hardin County, thence to the middle of Dallas County and south of a line extending from the north-central border of Madison County along the southern border of Mahaska and Keokuk Counties, thence in a northeasterly direction across the center of Washington County to the southern third of Clinton County. Survey reports are not yet completed, but indications are that the pest will be much more numerous than two years ago. We have received reports of this same pest from Kansas and Nebraska." (Special Report No. 14.)

FALL ARMY WORM (Laphygma frugiperda S. & A.)

Alabama W. E. Hinds (June 2). "I have complaints of the fall army worm from Hatchachubee in Russell County, where 40 per cent of the stalks are now being attacked by young worms on a 10-acre tract. I expect this species to appear quite generally from now on as they were abundant last fall and parasites were not numerous."

WHEAT-HEAD ARMY WORM (Heliophila albilinea Hübn.†)

Nebraska M. H. Swenk (June 15). "Moths of the wheat-head army worm were flying commonly during the latter part of May in southeastern Nebraska and some injury by this pest is anticipated during later June."

WESTERN WHEAT-STEM MAGGOT (Hylemyia cerealis Gillette)

Nebraska Myron H. Swenk (May 15). "The outbreak of western wheat-stem maggot reported last month which was brought to our attention on April 9 proved to be very local, involving only a small area in Morrill County, between Bridgeport and Alliance. The maggots continued boring in the stem of the wheat in the infested fields until about April 20. On May 6 flies began emerging from puparia in our rearing cages and continued coming out for several days. These puparia have developed from maggots collected April 11. Whether these flies will start another brood of maggots on the present wheat crop is yet to be determined."

WHEAT STRAW-WORM (Harmolita grande Riley)

Missouri Leonard Haseman (June 15). "This insect is occurring in about normal numbers at Columbia. In laboratory, adults emerged May 7 to 10. One wingless form emerged May 10."

JOINTWORM (Harmolita tritici Fitch)

Indiana J. J. Davis (June 15). "The jointworm is apparently more abundant than last year but does not yet appear as a serious menace."

Ohio H. A. Gossard (June 23). There is very little jointworm, though 3 to 5 percent infestation is reported from a few counties. Practically all northeastern counties show 1 or 2 per cent of H. vaginicola in every field.

GREATER WHEAT STEM MAGGOT (Meromyza americana Fitch)

Oregon A. L. Lovett (telegram, July 1). Serious infestation of Meromyza americana on spring wheat in Union County, Oregon. Hundreds of acres with from 10 to 75 per cent infestation. Date of sowing of little importance. Volunteer wheat main source of contamination. Main brood are mature larvae or pupae. Scattering adults, eggs, and young larvae are to be found.

Illinois W. P. Flint (June 19). "Much more abundant than usual in central and northern part of State. Reports of from 5 to 7 per cent damage have been received."

Nebraska M. H. Swenk (June 15). "Scattering injury by the greater wheat-stem maggot was noticeable in eastern Nebraska during the second week in June."

GREEN BUG (Toxoptera graminum Rond.)

Missouri A. C. Burrill. "Found this insect with Macrosiphum sp. and Aphis avenae in Perry and Mississippi Counties where oats were damaged from 50 to 75 per cent in Perry County, and 100 per cent in parts of Mississippi County. The infestation has now cleared up."

Texas J. B. Watkins (May 27). "Unusually heavy infestation in Cooke, Grayson, Denton, Collin, Fannin, Hunt, Dallas, Rockwall, Ellis, Hill, Somervell,

Erath, Hamilton, Bosque, McLennan, Coryell, and Bell Counties. The parasite Lysiphlebus tritici came too late to be of much help."

CORN-LEAF BLOTCH MINER or WHEAT LEAF MINER (Agromyza parvicornis Loew)

Ohio H. A. Gossard (June 23). The wheat leaf-miner is very abundant in Wayne County. In some fields 70 per cent of the leaves are mined out.

WHEAT MIDGE (Contarinia tritici Kirby)

Ohio H. A. Gossard (June 23). Wheat midge is a serious pest in a few of the south-central counties. This insect will probably do as much or more damage this year as any other wheat insect.

T. H. Parks. "Wheat midge is very bad in some Ohio counties. Has been increasing in numbers for three years; in some fields 20 per cent of the kernels are affected."

MEADOW PLANT-BUG (Miris dolobratus L.)

Indiana H. F. Dietz (June 15). "The meadow plant-bug has been collected in large numbers from lawns, meadows, and wheat and oat fields around Indianapolis."

TARNISHED PLANT-BUG (Lygus pratensis L.)

Nebraska M. H. Swenk (May 15). "The rather unusual numbers of tarnished plant-bugs reported from wheat fields in April were in evidence in the alfalfa fields in early May, but no obvious injury was being done by them except in a few cases."

WIREWORMS (Melanotus pilosus Blatch.)

Nebraska M. H. Swenk (April 15). "In Clay County a species of wireworm has been injuriously numerous in small grain fields; oat fields planted about March 15 were in some cases killed out and had to be reseeded by April 20. In some localities wheat fields had the extreme bases of the stems badly gnawed by these worms in early May to the obvious detriment of some of the fields."

CLOVER LEAFHOPPER (Agallia sanguinolenta Prov.)

Nebraska M. H. Swenk (May 15). "The rather unusual numbers of clover leafhoppers reported from wheat fields in April were in evidence in alfalfa fields in early May but no obvious injury was being done by them except in a few cases."

ALFALFA

PEA APHIS (Illinoia pisi Kalt.)

Nebraska M. H. Swenk (May 14). "The pea aphid was reported as unusually numerous in alfalfa fields in southeastern Nebraska, from Richardson County to Gage County. Some rather serious injury by this pest is expected during this next week."

Colorado C. P. Gillette (May 27). "While we have noted the overwintering of this aphid for many years on alfalfa plants in protected places on college campus at Fort Collins we have never known it to be abundant enough to attract the attention of farmers until this spring. On May 4 a portion of an alfalfa plant having upon it a considerable number of coccinellid larvae was received from a stock farm near Westminster just north of Denver. The statement was made that many acres of alfalfa on this farm were turning brown and dying from the attacks of these "Worms". Mr. C. L. Corkins, of this office, was sent to investigate the trouble and found the damage due to the pea aphid. A few other fields, where some damage has been done, have been found, but the damage has not been extensive. On the college campus there are small patches of alfalfa on the south side of buildings that have been killed down by this louse. The unusual presence of this insect this spring is probably due to the mild winter which has permitted an abnormal number of the lice to survive the cold weather."

Oregon L. P. Rockwood (June 11). "Only one field in the vicinity of Forest Grove has been seen which was seriously injured. This was in vetch and the damage estimated at about 50 per cent of the crop. This was a field consisting of 5 acres of early fall sowing. Several coccinellids and 3 species of syrphus flies have eaten about 75 to 80 per cent of the aphids. This field is bordered throughout its entire length by an early spring sown field of the same variety of vetch which was not at all injured; patches of purple vetch stood out prominently in the injured field and these plants were not injured by the aphids."

A. L. Lovett (June 17). "This insect is generally reduced in numbers, or has disappeared from the fields at this time. Natural enemies are responsible for 80 per cent of the decrease. Five species of coccinellids and three species of syrphids are the main parasitic forms. Serious injury on vetch in Western Oregon is confined to an occasional early sown field, or volunteer field. Injury is more severe on peas and alfalfa in Umatilla County (Dean) but decreased abundance of aphids and injury is evident since the middle of May."

ALFALFA WEBWORM (Loxostege similalis Guen.)

Colorado C. P. Gillette (May 22). "Moths have been received from different localities beginning early in May and indicating that this insect will be common and possibly very abundant over much of the alfalfa growing territory from Rocky Ford in the lower Arkansas Valley to Fort Collins."

SUGAR BEET WEBWORM (Loxostege sticticalis L.)

Colorado C. P. Gillette (May 22). "Moths were flying in moderate numbers to lights in northern Colorado on May 20. Complaints of injury to new seedings of alfalfa in the Fort Collins district are also being made."

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Missouri S. M. Jordan, State Board of Agriculture (June 11). "This insect

is much more numerous than usual on alfalfa at Columbia and Keytesville."

PALE STRIPED FLEA-BEETLE (Systema blanda Melsh.)

Michigan L. G. Gentner (June 20). "First noted this insect two weeks ago shortly after young alfalfa plants came through. They eat young leaves and the growing centers and have damaged the crop about 10 per cent. At present the beetles are disappearing and the majority of the plants are putting out new growth. They first appeared near wooded and weedy land."

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

California H. S. Smith (June 5). "Serious damage to small fields in Shasta County. This is the first occurrence of this insect^{been} in California as a pest although it is recorded as having/collected in the San Francisco Bay Region."

NEMATODES

Nebraska M. H. Swenk (May 5). "Alfalfa roots were found bored by nematodes in a field in Madison County that was suffering from crown rot and in which the roots were tending to decay."

CLOVER

LESSER CLOVER-LEAF WEEVIL (Phytonomus nigrirostris Fab.)

New York J. D. Detwiler (May 28). "The beetles are still fairly abundant and working in the axillary buds and in the heads; no pupa observed as yet."

Ohio T. H. Parks (June 10). "Damage was severe in seven western Ohio counties. Transformation to the beetles took place June 1 to 10. Some larvae were killed by fungus after the cocoons were spun."

Indiana J. J. Davis (May 17). "We are beginning to get in reports of considerable damage to clover, particularly big English clover, and apparently the area of heavy infestation in Indiana is increasing. The insect causing the damage is the lesser clover-leaf weevil. We found the larvae in all sizes from the very smallest to those nearly full grown. This is for central Indiana."

Illinois W. P. Flint (Jun 19). "More numerous than usual over the eastern two-thirds of the State, wherein 50 per cent of the heads are infested. One hymenopterous parasite has been observed. Nearly all of the weevils are in the adult stage."

Oregon L. P. Rockwood (June 9). "This insect is more numerous than usual at Forest Grove. The damage is decidedly more noticeable this month than last. The distribution was determined last month to extend to near Yamhill in Willamette Valley and Pacific City on the Coast."

CLOVER-SEED MIDGE (Dasyneura leguminicola Lint.)

Oregon L. P. Rockwood (telegram, June 6). "Clover-flower midge present in ~~Willamette~~ Willamette Valley in numbers sufficient to cut seed yield if weather July 1 is favorable to second generation. Advise red clover hay be off fields by June 15. Lovett advised by wire tonight. (Letter, June 11). First generation of this insect is present in sufficient numbers to eat into the seed crop seriously in the second generation if weather of the last of June and first of July furnishes sufficient moisture for a maximum second generation. The rainy fall of 1920 and spring of 1921 were probably favorable to this species."

A. L. Lovett (June 17). "Generally present in about average numbers but in excess of past three years; excessive fall and spring rains probably favorable."

CLOVER APHIS (Anuraphis bakeri Cowan)

Oregon L. P. Rockwood (June 11). "These aphids are now very thick on roadside plants and along borders of small fields about Forest Grove. They are very scattering in the clover fields but with favorable weather may cause damage to the seed crop in July and August."

A. L. Lovett (June 17). "Increasing in numbers, probably average number now present in northern Willamette Valley."

CLOVER TYCHIUS (Tychius picirostris Fab.)

New York J. D. Detwiler (May 28). "Beetles fairly abundant in Ithaca, destroying the anthers of flowers. They are now laying eggs."

CORN

STALK BORER (Papaipema nitela Guen.)

Nebraska M. H. Swenk (June 11). "First reports of injury to young corn by the stalk borer were received today."

CORN EARWORM (Chloridea obsoleta Fab.)

Virginia K. M. King (May 28). "Eggs found on early corn on this date. Were the first found this year, near Charlottesville. First adult captured on June 2."

Florida Jeff Chaffin (June 20). "More abundant than usual throughout the State; from 10 to 25 per cent of the crop has been damaged. During the past month many reports of serious damage have been received."

Kansas J. W. McCulloch (June 21). "Usually the first brood of corn earworm/scarcely noticed in field corn. This year, however, both eggs and larvae have been exceptionally abundant."

ARMY WORM (Cirphis unipuncta Haw.)

Illinois W. P. Flint (June 20). "Larvae have been abundant in rank wheat fields and in a few cases have migrated out to fields of corn. Poisoned bran without fruit has been very effective."

Missouri A. C. Burrill (June 3). "Usual local epidemic near Carrolton. About 50 per cent of crop damaged."

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

South Carolina S. E. McClendon (April 20). "Distribution wide in Berkeley County. Some entire crops destroyed."

S. C. Stribling (May 13). "Practically all over Cherokee County considerable damage has been done to early corn."

R. H. Lemon (May 13). "Locally destructive in Fairfield County."

WIREWORMS (Agriotes mancus Say et al.)

New York C. R. Crosby and assistants report that 25 per cent of a corn stand has been killed at Danby in Tompkins County. This field was in oats and barley in 1918 - in meadows in 1919 and 1920 - and planted to corn this spring; as many as 17 wireworms were found in some hills. An entire stand on a quarter of an acre was killed out at Courtland; three or four acres had 25 per cent of the stem injured; field was in meadow last year. In both places the wireworm concerned was Agriotes mancus.

Illinois E. L. Dillon (June 17). "Farmers at Waverly report loss of corn stand planted in sod ground. Wireworms eating out the kernels in some cases. We found this to be true after the corn had sprouted. Replanting was necessary in several cases."

North Carolina Franklin Sherman (May). "Correspondence indicates more injury than usual to corn, especially on lowlands."

MAIZE BILLBUG (Sphenophorus maidis Chitt.)

Missouri Leonard Haseman (June 3). "Messrs. Burrill and Winkler report very serious injury in Missouri River bottoms near sloughs, In Carroll County 98 per cent of the crop is infested. Even showing feeding perforations of these insects, sometimes c with the work of Diabrotica 12-punctata. A large species robust in color but twice as long was also present. Also received reports of damage from Perry County.

PALE-STRIPED FLEA-BEETLE (Systema blanda Melsh.)

Indiana J. J. Davis (June 15). "Flea-beetles appeared in unusual abundance this year, damaging corn. The insect responsible in the southwestern section, south of Terre Haute, is a small black species, while the species responsible for the damage in west-central Indiana is a pale striped flea-beetle, probably Systema blanda."

BRASSY FLEA-BEETLE (Chaetocnema pulicaria Melsh.)

Indiana E. E. Stimson, county agent, reports this insect as doing damage to corn in Orange County. Specimen sent to J. J. Davis for identification.

BROWN COLASPIS (Colaspis brunnea Fab.)

Illinois W. P. Flint (June 19). "Two fields of corn in the western part of the State, both in clover in 1920, were severely damaged. Larvae full grown by June 7."

CORN ROOT-APHIS (Anuraphis maidi-radici Forbes)

Missouri A. C. Burrill (June 7). "Insect extremely scarce at Shelbyville. Complaints of root aphid found to be erroneous."

CORN LEAF-APHIS (Aphis maidis Fitch)

Kansas J. W. McColloch (June 21). "The corn leaf-aphid has made its appearance in corn two weeks earlier than usual and is causing considerable injury."

WHITE GRUBS (Phyllophaga spp.)

New York E. P. Felt (April 28). "June beetles were swarming in large numbers as early as the evening of April 28, according to report received from Roy Latham, Orient, Suffolk County."

L. F. Strickland (June 13). "Very rare. No beetles observed in Niagara County."

Illinois W. P. Flint (June 20). "Reported from several localities in northern part of the State, but no general outbreak."

Iowa H. E. Jaques (letter June 25 to W.R. Walton). "White grubs seem to be unusually abundant in our part (southern) of the State and considerable complaint is being made."

Wisconsin S. B. Fracker. "Fond du Lac and southwest to Grant County have more of this insect than in 1919 and 1920, but less than in 1912-15-18. About as much damage on sod land as was expected. A few reports received from northern Counties."

Missouri A. C. Burrill (May 17). "A heavy flight of this insect took place on this date, east of Fredericktown. (June 7). First reported from Shelbyville on this date. Two or three more flights of June beetles have occurred since last report."

GRASSHOPPERS (Acridiidae)

New York L. C. Tyler (June 4). "Melanoplus atlanis or M. femurrubrum appearing in great numbers at Alabama on muck land. They are all immature."

Illinois W. P. Flint (June 19). "Young grasshoppers abundant locally in a few areas over the southern two-thirds of the State. No general outbreak is expected."

Iowa F. A. Fenton. "I have just returned from the southwestern part of the State in Mills County and find that grasshoppers there are more numerous than ever before and are doing quite a bit of damage. Whether or not this is the beginning of a more or less extensive outbreak I am not certain. The species concerned is the two striped grasshopper."

Wisconsin H. F. Wilson (June 20). "Grasshoppers are appearing in great numbers throughout the northern and northeastern portions of the State. We are trying to organize our growers in a poison campaign and hoping to prevent any serious damage."

S. B. Fracker (June 24). "The worst outbreak since 1890 is under way in northern Wisconsin north of Barron, Stevens Point, and Green Bay, Blister beetle, Epicauta cinerea, becoming numerous, also a bacterial disease has been found. Poisoned bait is being used by the ton in Door, Florence, and Shawano Counties, and work is beginning in Forest, Price, and Portage Counties."

Minnesota Stewart Lockwood (May 24). "I have just returned from a trip to Minnesota. We found a large quantity of grasshopper eggs in the extreme northwestern corner, namely Kittson County. Here the grasshopper eggs range 40 to 50 pods to the square foot; in some localities egg parasites were noticed fairly abundant, but not in large enough numbers to help much for this year. Grasshoppers were first noticed hatching May 11."

South Dakota A. L. Ford (May 16). "Along White River bottoms grasshopper eggs are very numerous; these have passed the winter in sound condition; an outbreak is practically assured for this locality. Eggs are confined to the bottoms. Blister beetles are abundant."

H. C. Severin (May 23). "Grasshoppers have hatched in large numbers in Tripp County."

Nebraska M. H. Swenk (June 15). "Grasshoppers were hatching out in southern Nebraska during the last two weeks in May, and injury began to be noticed by the second week in June. Rather larger numbers than usual are reported from Otoe, Clay, and Fair Counties. The grasshoppers hatched out very irregularly in southeastern Nebraska this spring, there being very few of them in some places where they were abundant last fall, while in other places where they were no more abundant last fall they have hatched out in considerable numbers."

Oregon A. L. Lovett (June 17). "Outbreaks of Camnula pellucida are reported from Lake, Klamath, Crook, and Deschutes Counties. Eggs hatching May 5 to 20. Organized community poisoning campaign in egg beds has been successful. Lake County drive was completed by June 9."

FRUIT INSECTS

2

APPLE

GREEN APPLE APHIS (Aphis pomi DeG.)

- New York. C. R. Crosby and assistants (June 18) report this insect as dangerously abundant in Orleans County and in much smaller numbers than usual in Ulster, Chautauqua, Albany, Onondaga, Genesee and Niagara Counties. Has appeared in considerable numbers in several young apple orchards in Columbia County.
- P. J. Parrott (June 22). "Serious outbreak on nursery stock at Geneva. One firm has forty men dipping the infested tips."
- West Virginia T. D. Gray (April 21). "Quite numerous in Tyler County, apparently being very badly infested with parasitic fungus."
- Ohio H. A. Gossard (June 23). "The green apple aphid threatened much damage a few weeks ago, but syrphus flies, lady bugs, and other natural enemies seem to have the upper hand with these insects at the present time and we do not anticipate disastrous damage anywhere."
- Indiana J. J. Davis (June 15). "The green apple aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."
- Oregon A. L. Lovett (June 17). "Hood River and Willamette Valley below the average. Materially decreased lately, due to Puccinellidae and syrphids. At Milton (Hopson) outbreak is about average."

APPLE-GRAIN APHIS (Rhopalosiphum prunifoliae Fitch)

- New York C. R. Crosby and assistants. "Was quite numerous earlier in the season but has now left the apples in Chautauqua County. Also reported as very scarce in Genesee, Niagara and Orleans Counties."

ROSY APPLE APHIS (Anuraphis roseus Baker)

- Massachusetts R. A. Van Meter (June 17). "A severe infestation of this insect occurred last year in Plymouth County. Have not observed it this year. Very few aphids of any kind are present in the orchards."
- New York C. R. Crosby and assistants report this insect as more abundant than usual in Wayne County, where it is appearing in threatening numbers. Also seriously abundant in Genesee, Ulster, and Chautauqua Counties. Reported as doing slight damage in Onondaga, Niagara, Columbia, Albany, and Orleans Counties.
- Delaware J. F. Adams (May 19). "Much more abundant in May than in April. Ladybirds were very active in April but not so evident in May. By June 2 they became numerous enough to infest about one per cent of the tips."
- Ohio H. A. Gossard (June 23). "Rosy apple aphid has been found quite abundant in a few orchards."
- Indiana J. J. Davis (June 15). "The rosy apple aphid is one of the species most commonly brought to the attention of this office. Will probably be a serious pest this year from indications during the last half of May."
- Oregon A. L. Lovett (June 17). "Southern Oregon; Average, damage slight, most injury to fruit on interior of trees. Willamette Valley; Slightly below the average, Baldwins show particularly serious injury, mostly on the northwestern side of trees, probable damage 5 to 15 per cent. Hood River: Injury on unsprayed trees 20 per cent. Milton (Hopson): Worse than usual, injury about 10 per cent. Found aphids had practically left the apples on June 14 in all sections."

WOOLLY APPLE APHIS (Eriosoma lanigerum Hausm.)

- New York C. R. Crosby and assistants. "Occasional light infestations in Orleans, Niagara, Chautauqua, Ulster, Genesee, Albany, and Columbia Counties."
- Indiana J. J. Davis (June 15). "The woolly apple aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

Missouri L. Haseman. "This spring for the first time this louse has attacked elm tree trunks, as a typical woolly aphis as on the apples. At present apple twigs and patches on the trunks are white with these lice, which are very abundant about Columbia, Peculiar and Kansas City."

Oregon A. L. Lovett (June 17). "Southern Oregon: About average abundance, increasing on the branches, no serious injury. Milton (Hopson): Seriously abundant, worst outbreak since 1918."

CODLING MOTH (Carpocapsa pomonella L.)

New York L. F. Strickland (June 11). "Eggs found early in the week of June 6 in Niagara County. This is the earliest record for this county since 1912. Only a few eggs were found, however, and no fresh ones have been observed since."

C. R. Crosby and assistants report this insect as in normal and subnormal numbers in Columbia, Ulster, Orleans, and Chautauqua Counties. Eggs were just beginning to hatch on June 15 in Orleans County and eggs were first observed on June 7 in Chautauqua County.

Indiana J. J. Davis (June 15). "The codling moth does not seem to be as abundant as usual. The first larvae of the second generation began spinning cocoons within the past day or so at Lafayette."

Illinois W. P. Flint (June 20). "About 95 per cent of the fruit crop was destroyed by the late frosts. Adults of the first brood of codling moth have been very abundant. Emergence ceased in Southern Illinois about June 7. In central Illinois a few are still emerging. Larvae were under bands in southern Illinois on June 5 and in central Illinois on June 15."

South Dakota H. C. Severin (May 24). "Moths making their first appearance at Brookings today."

Oregon A. L. Lovett. "Hood River: Adults observed May 14 (Childs); about 33 per cent hang over as larvae. The first eggs observed May 21. Medford: First larvae observed June 1. Fungous disease present; of small importance however. Corvallis: First eggs observed May 25; about 20 per cent hang over as larvae; first eggs observed June 4; first larvae June 14. Extra cover spray probably due for the later emerging moths."

RIBBED COCCOON MAKER (Bucculatrix pomifoliella Clem.)

New York C. R. Crosby and assistants reported as occurring in very small numbers in Albany, Onondaga, Chautauqua, Genesee, and Columbia Counties.

FRUIT TREE LEAF-ROLLER (Archips argyrospila Walk.)

New York L. F. Strickland (June 18). "Twice as abundant as usual in Niagara County."

C. R. Crosby and assistants report this insect as very abundant and destructive in a large percentage of the orchards, being unusually destructive on nearly all varieties of fruit in Orleans County, often being very plentiful in some well sprayed orchards. Larvae had practically all pupated prior to June 11 in Orleans County. Causing considerable damage in Genesee County and present in considerable numbers in Orange and Ulster Counties. The insect is more abundant than usual but doing no serious damage in Niagara County, where the moths were emerging on June 11. The insect has also been reported in about normal number in Albany, Chautauqua, and Onondaga Counties and very scarce in Columbia County.

Oregon A. L. Lovett (June 17). "Hood River (Childs): Unusually abundant and serious in recently invaded areas. Oil spraying effective when intelligently done. Parasites very rare. First pupa observed June 4."

CIGAR CASE-BEARER (Coleophora fletcherella Fernald)

New York C. R. Crosby and assistants report this insect as occurring in considerable numbers, especially in unsprayed orchards in Onondaga, Orleans, and Genesee Counties and as not serious, though present, in Chautauqua, Albany, and Columbia Counties.

L. F. Strickland (June 18). "Present in normal numbers but little damage being done in Niagara County."

PISTOL CASE-BEARER (Coleophora malivorella Riley)

New York C. R. Crosby and assistants report this insect as very abundant in old orchards and in poorly sprayed orchards in Orleans County, as very abundant in Genesee County, and as rare this year in Ulster and Albany Counties. None were reported from Chautauqua County.

BUD MOTH (Tmetocera ocellana Schif.)

- New York C. R. Crosby and assistants report this insect as very abundant and injurious in Albany, Genesee, and Orleans Counties and as occurring in small numbers in Onondaga, Columbia, Chautauqua, and Ulster Counties. In the last county they pupated on May 24.
- L. F. Strickland (June 18). "Not as numerous as usual in Niagara County this year."

- Oregon A. L. Lovett (June 17). "Generally prevalent in western Oregon. Abundance and injury average or slightly above."

GREEN FRUIT WORM (Xylina antennata Walk.)

- New York C. R. Crosby and assistants report this insect as in less than normal numbers in Onondaga, Albany, Columbia, Orleans, Genesee, Ulster and Niagara Counties. Present in about normal numbers in Chautauqua County, where they had pupated by June 18. Injury quite common up to June 10 in Ulster County.

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

- New York C. R. Crosby and assistants report this insect as present in about normal numbers but not at all serious in Columbia, Ulster, Orleans, Chautauqua, and Niagara Counties.

TENT CATERPILLAR (Malacosoma americana Fab.)

- New York E. P. Felt (June 1). "Mr. Roy Latham reports the apple tent caterpillar about as abundant on wild cherry and apple in Suffolk County as last year. Nearly all the nests are emptied by insectivorous birds."

C. R. Crosby and assistants report this insect as more common than last year though still scarce in Tompkins County, nearly all the larvae being killed by parasites; as quite plentiful in Onondaga County; common but not abundant in Ulster County; and a few present in Genesee, Columbia, and Chautauqua Counties."

L. F. Strickland (June 18). "No tents observed in Niagara County."

- South Carolina C. L. Baxter (April). "This insect is quite widely distributed about Beaufort."

FOREST TENT CATERPILLAR (Malacosoma disstria Hübn.)

South Dakota H. C. Severin (May 22). "Larvae about one-half to three-quarters of an inch long at Brookings."

SPRING CANKERWORM (Paleacrita vernata Peck)

New York E. P. Felt. "Mr. G. F. Wheaton and J. A. Thomson report that the spring cankerworm has seriously damaged a number of unsprayed orchards in Ontario County. Most of the insects had pupated by May 31. Some poorly sprayed orchards were defoliated in the town of Penfield, Monroe County, on June 2."

C. R. Crosby and assistants report this insect as continuing its destructive work and doing more damage than last year in Genesee County; denuding the leaves in several trees in Erie County; at least a hundred trees completely defoliated in Genesee County; two outbreaks earlier in the month in Niagara County; abundant in uncared for orchards in the Southern part of Orleans County; and very scarce in Onondaga County.

Indiana J. J. Davis (June 15). "Spring cankerworms (?) have been reported from many sections of the State and reports indicate the worst infestation and the greatest damage in several years."

Wisconsin H. F. Wilson (June 4). "Nearly every tree is being stripped in Southern Wisconsin, the crop for this year being ruined. Infestations especially serious in Dane, Washington, Juneau, and Waukesha Counties."

(June 20). "Causing a tremendous amount of damage throughout the southern and western portions of the State."

S. F. Fracker (June 15). "More common than every before. Complete defoliation of from 50 to 75 per cent of the orchards in several counties, extending from Madison to Green Bay and eastward. Damage completed by June 15."

FALL CANKERWORM (Alsophila pomataria Har.)

New York L. F. Strickland (May 24). "Cankerworms were attacking apple and pear at Rockport, Niagara County, being more abundant than last year."

North Carolina Franklin Sherman (May 29). "Fall cankerworm reported as being now evident in certain of our mountain areas. This will be the fifth consecutive year of these attacks."

Wisconsin S. B. Fracker (June 15). "Associated with the spring cankerworm in a serious outbreak, extending from Madison to Green Bay and eastward. Complete defoliation of from 50 to 75 per cent of the orchards in several counties. Damage about ended by June 15."

APPLE RED BUG (Heterocordylus malinus Reut.)

Massachusetts H. T. Fernald (June 23). "The red bug has been more abundant around Amherst this year than usual. Adults are now appearing."

R. A. Van Meter (June 17). "Present in eastern part of the State but less numerous now than last month."

New York C. R. Crosby and assistants. "This insect is becoming very scarce. Reports of occasional specimens being received from Columbia and Chondaga Counties."

FALSE APPLE RED BUG (Lyraidea mendax Reut.)

Connecticut M. P. Sappe (June 24). "Less numerous about New Haven and Milford than in 1930."

New York C. R. Crosby and assistants report this insect as causing considerable injury in orchards where they were plentiful last year and quite generally distributed throughout Orleans County, many being in the adult stage June 18. More numerous than last year in Chautauqua County, the nymphs being in the last instar on June 18. Fairly abundant in Genesee, Onondaga, Albany, Columbia, and Ulster Counties, adults first observed June 6 in the last county. Nymphs nearly mature in Wayne County on May 28. Injury beginning to show up on the fruit, and nymphs being in the fourth and fifth instars on May 30 in Ulster County.

L. F. Strickland (June 18). "About twice as numerous as usual in Niagara County."

Ohio H. A. Gossard (June 23). "False apple red bug has occasioned notable damage in orchards about Wooster even where nicotine sulphate was included in the first codling moth spray."

Indiana F. W. Wallace (May 5). "Apple red bug found at Muncie May 5. This is the second record of this insect for Indiana. The other record is that made by Baldwin at Goshen in 1916."

APPLE LEAFHOPPER (Emnoasca mali LeB.)

Delaware J. F. Adams (May). "This insect is more numerous than usual about Bridgeville, where 80 per cent of the leaves were found to be infested. At Newark this insect is doing very slight damage as compared with that in the southern part of the State."

ROSE LEAFHOPPER (Emnoa rosae L.)

New York C. R. Crosby and assistants. "Causing considerable foliage injury in young orchards in Orleans County. Present in considerable numbers and doing a good bit of damage in Onondaga County. First brood has been heavy and is already doing considerable damage in Niagara County. This insect seems to be on the increase."

Emnoa unicolor Fitch

Pennsylvania J. R. Eyer (June 14). "Adults obtained at Gerard today."

BUFFALO TREE-HOPPER (Ceresa bubalus Fab.)

New York C. R. Crosby and assistants. "Injury to some extent in most young plantings in Orleans County. Generally present but not at all serious in Albany, Genesee, Chautauqua and Ulster Counties. First adult observed on June 16 in Ulster County."

SAN JOSE SCALE (Aspidiotus perniciosus Comstock)

New York E. P. Felt (June 3). "San Jose scale has been about eliminated from Highland Park by winter spraying. Plants badly affected fifteen years ago have completely recovered. It is not considered as difficult to control at Rochester as the oyster-shell scale."

Crosby and assistants. "Becoming more abundant even in orchards well taken care of in Genesee County; very prevalent in some sections of Orleans County. The young of the first brood crawling on June 18 in Niagara County, where the insect is four times as abundant as last year. On the increase in Albany County. Slight infestations in Onondaga, Chautauqua, and Ulster Counties."

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

New York E. P. Felt (May 27). "R. E. Horsey reports this insect from Monroe County, where the young emerged early, and spraying is now under way."

C. R. Crosby and assistants. "Becoming more abundant even in well cared for orchards in Genesee County. Quite generally present in Ulster, Columbia, Onondaga, Albany, Orleans, and Niagara Counties."

South Dakota H. C. Severin (May 24). "Eggs are hatching at Brookings today."

SCURFY SCALE (Chionaspis fuffura Fitch)

New York C. R. Crosby and assistants report finding a few of these insects in Orleans County.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York C. R. Crosby and assistants report **that** this insect has never been a pest in Chautauqua County but that quite a few of the flies were observed in Albany County.

ROUNDHEADED APPLE-TREE BORER (Saperda candida Fab.)

New York C. R. Crosby and assistants. "Found this insect quite abundant in Albany and Wayne Counties; adults were observed in the latter county on June 18. Found a few in a young orchard in Orleans County."

L. F. Strickland (June 18). "A scattered, light infestation observed in Niagara County."

FLAT-HEADED APPLE-TREE BORER (Chrysobothris femorata Fab.)

New York C. R. Crosby and assistants report this insect as very abundant in Albany and Columbia Counties, quite common in Ulster County, and a scattered light infestation in Niagara County.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say.)

New York D. D. Ward (May 5). "Several adult specimens found on an apple at Onondaga."

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

New York L. F. Strickland (June 18). "Just beginning to appear."

RED SPIDER (Tetranychus citri McGregor)

New York C. R. Crosby and assistants report this insect as very **abundant** in old orchards in Orleans County and quite scarce in Chautauqua and Ulster Counties. They appeared early in

the season in orchards on light soils in Columbia County.

L. F. Strickland (June 18). "Just beginning to appear on apple. Slight infestations appear on prune. Much below normal numbers in Niagara County."

Paratetranychus pilosus Can. & Fanz.

New York

C. R. Crosby and assistants report this insect as abundant in many orchards in Columbia County. Also found in Albany and Onondaga Counties. There is a possibility that several of the New York State notes on Tetranychus citri in reality refer to this insect.

P E A R

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York

G. E. Smith (June 18) reports this insect as being present in greater numbers than last year in Orleans County, but not plentiful and not injurious.

J. B. Palmer (June 18). "Very abundant in Ulster County. Disappeared about June 6."

L. F. Strickland (June 18). "Only one instance of foliage and blossom injury noticed in Niagara County."

E. P. Felt (May 21). "Mr. Haughey reports pear thrips are about 50 per cent more abundant in Niagara County, though only a minor percentage of the crop is damaged."

PEAR PSYLLA (Psylla pyricola Foerst.)

New York

C. R. Crosby and assistants report this insect as extremely abundant in Orleans, Genesee, Columbia, Genesee, Ulster, and Onondaga Counties. By May 28 adults were out in Columbia, Genesee, Orleans, Wayne, and Onondaga Counties. By June 11 second-brood nymphs were appearing abundantly in Ulster County and by June 18 they were numerous in Wayne, Orleans, and Genesee Counties. In the more seriously infested regions an emergency spray is being applied for the control of the second-brood nymphs.

brood

L. F. Strickland (May 28). "First/ of nymphs have for the most part become adults in Niagara County. (June 11). Second brood of nymphs beginning to appear, with a vast number of eggs still being deposited. (June 18). About three-fourths of the second-brood eggs have hatched. Severe infestation general over entire county."

PEAR-LEAF BLISTER MITE (Eriophyes pyri Pgst.)

- New York C. R. Crosby and assistants report this insect as very abundant on unsprayed trees in Nassau, Ulster, and Orleans Counties. Also reported from Chautauqua, Genesee, Onondaga, and Wayne Counties.
- Connecticut W. E. Britton (June 23). "Seemingly more abundant than average year. Localities, Guilford, Meriden, Stratford, and North Woodstock.
- Oregon A. L. Lovett (June 17). "Prevalent, slightly worse than average and more serious than earlier in season. Hood River (Childs): On apple quite general in higher altitudes."

PEAR AND CHERRY SLUG (Caliroa cerasi L.)

- New York C. R. Crosby and assistants report a single outbreak of this insect in Columbia County.
- Indiana H. F. Dietz. "Indications are at present that the pear slug will be a serious pest this coming summer."

PEAR MIDGE (Contarinia pyrivora Riley)

- New York C. R. Crosby and assistants report serious infestation on Lawrence, Bosc, and Clap varieties of pears in Genesee County. The worst infestation in years. In Ulster County 10 per cent of the fruit had been destroyed by May 30 and considerable injury was noticed at Ravena, Albany County.

QUINCE CURCULIO (Conotrachelus crataegi Walsh)

- New York J. B. Palmer (May 12). "First beetle of the season found on this date. (May 30); beetles still present in small numbers on trees but no injury to fruit observed as yet in Ulster County."

Lycus communis Knight

- New York L. F. Strickland (June 18). "Unusually scarce in Niagara County."
- C. R. Crosby and assistants. "Destructive in a few orchards in Orleans County. Reported in small numbers from Onondaga, Genesee, and Columbia Counties."

BAKER'S MEALYBUG (Pseudococcus bakeri Essig)

- California T. D. Urbahns (May 14). Sacramento: "The presence of this species upon fruit is very objectionable."

CALIFORNIA PEAR SAWFLY (Gymnonychus californicus Marlatt)

A. L. Lovett (June 17). "More abundant than average. Larvae mature on June 12; foliage attacked but no serious injury. Willamette Valley; eggs hatching, May 15. Larvae of fair size May 22; average abundance.

Hoplia trifasciata Say

New York C. R. Crosby and assistants. "Doing considerable damage to blossoms and leaves in one orchard." Locality, Barnards, Monroe County.

Q U I N C E

QUINCE CURCULIO (Conotrachelus crataegi Walsh)

New York L. F. Strickland (June 18). "Just starting to make feeding punctures in Niagara County."

C. R. Crosby and assistants (June 18) report that only occasional adults have been observed in Ulster County and they have not yet appeared in Chautauqua County.

FRUIT-TREE LEAF-ROLLER (Archips arevrosbila Walk.)

L. F. Strickland (May 28). "Causing serious injury in a large orchard in Niagara County. (June 11) The pupae have been almost completely destroyed by the parasite Pimpla sp."

P E A C H

GREEN PEACH APHIS (Myzus persicae Schz.)

New York G. E. Smith (May 28). "Several orchards infested in Orleans County. (June 18) Seriously numerous in one orchard."

BLACK PEACH APHIS (Anuraphis persicae-niger Smith)

New York L. F. Strickland (June 18). "Normally abundant in Niagara County."

Indiana J. J. Davis (June 15). "The black peach aphid is a common species this spring."

~~Manuscript of the above work is in the possession of the U. S. Department of Agriculture, Washington, D. C.~~

Nebraska M. H. Swenk (May 5). "Black peach aphid was found in excessive abundance in a peach orchard in Buckolls County on this date, where it was killing the trees. This is the first instance of abundance and serious injury by this aphid that we have noted in this State."

Washington, D. C. E. J. Newcomer (May 21). "This species has not been noted before this year, but probably has been here for several years, as it is well established in several orchards in Yakima County. (May 24) This insect has destroyed nearly 100 per cent of the crop in cases where no remedial measures were applied. It is now leaving the peach trees and appearing abundantly on mustard, cabbage, tomatoes, etc."

PEACH-TREE BORER (Aegeria exitiosa Say)

New York C. R. Crosby and assistants (May 21). "A considerable number of borers were found in one orchard in Orange County. (June 18) Very abundant in Nassau, Ulster, and Albany Counties, and also quite abundant in Orleans County. (June 24) The borers are now pupating in Wayne County."

L. F. Strickland (June 18) "Normally abundant in Niagara County."

Indiana J. J. Davis (June 15). "The peach-tree borer is abundant everywhere in Indiana. Spring applications of paradichlorobenzene have given almost perfect control."

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

New York C. R. Crosby and assistants report this insect as being numerous in Orleans, Wayne, and Albany Counties, especially in brown-rot cankers.

PEACH TWIG-BORER (Anarsia lineatella Zell.)

Oregon A. L. Lovett (June 17). "Generally prevalent in western Oregon. Abundance and injury average or slightly above."

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

C. R. Crosby and assistants report finding this insect quite common in sickly trees in Wayne, and in a few cases in Columbia and Orleans Counties, where the beetles were working on trees injured by the severe winter.

L. F. Strickland (June 18). "Normally abundant in Niagara County."

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

New York

P. J. Parrott (May 28). "Found this insect injuring foliage and fruit at Junius, Cayuga, and Waterloo.

C. R. Crosby and assistants report that during the last week in May this insect was found doing considerable damage to young fruits at Williamson and eating leaves affected with peach leaf-curl at Covert.

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

New York

G. E. Smith (June 11). "Found in abundance in two peach orchards and one apple orchard doing serious injury to the fruit in Orleans County."

TARNISHED PLANT-BUG (Lycus pratensis L.)

New York

L. F. Strickland (June 18). "Doing some injury to peaches in Niagara County."

North
Carolina

G. H. Anderson (May 19). "Locally abundant on young peach trees in Chesterfield County."

C H E R R Y

CHERRY APHIS (Myzus cerasi Fab.)

New York

C. R. Crosby and assistants (May 20). "Some cherries badly infested at Binghamton (May 28). Abundant in Orleans County; by June 18, the Orleans County outbreak was pretty well cleaned up by the ladybird larvae. Abundant in Ulster County on May 30. Still numerous on June 18, on which date they were reported as more abundant than last year in Onondaga County. Severe outbreak in Columbia County. (June 24) Fairly common in most cherry orchards in Wayne County."

L. F. Strickland (June 18). "Three times as abundant as normal in Niagara County."

Ohio

H. A. Gossard (June 23). "The black cherry aphid has probably been more numerous than any other aphid this year although hardly a scourge anywhere."

Delaware

C. O. Houghton (June 4). "This species is still very numerous. Hundreds of larvae and pupae of Adalia bipunctata can be found upon the infested trees. Have observed as many as 13 pupae on a single leaf."

Indiana J. J. Davis (June 15). "The cherry aphid is a common species this spring."

CHERRY MAGGOT (Rhagoletis cingulata Loew)

New York C. R. Crosby and assistants report this species on June 18. Flies becoming quite numerous in Onondaga County, in small numbers in Albany, and Orleans County. First flies observed in Onondaga County on June 10 and in Columbia County on June 13."

PEAR AND CHERRY SLUG (Caliroa cerasi L.)

Indiana J. J. Davis (June 15). "Cherry slug has been unusually abundant, particularly in southern Indiana, where it was not an uncommon sight in the past few weeks to see large trees with the foliage completely browned."

H. F. Dietz (June 15). "Indications are at present that the cherry slug will be a serious pest this coming summer."

Oregon. A. L. Lovett (June 17). "Adults observed May 23. Eggs May 25. About average abundance at Corvallis."

CHERRY-TREE TORTRIX (Cacoecia cerasivorina Fitch)

New York E. D. Merrill (June 2). "Present in unusual numbers in Erie County."

Indiana H. F. Dietz (June 15). The cherry-tree tortrix was reported from Vincennes damaging mahaleb nursery stock."

ROSE-LEAF BEETLE (Nodonota puncticollis Say).

New York E. L. Chase (June 13). "Injuring black cherries in Ulster County."

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

New York P. Rupert (June 11). "Doing considerable damage on cherry and to a less extent on apples in Wayne County."

P L U M

PLUM CURCULIO (Conotrachelus nenuphar Herbst)

Massachusetts H. T. Fernald (May 31). "Mr. L. Midgley reports that this insect is far more numerous than last year at Worcester. This month has been characterized by more rain than usual and extremes of temperature."

Connecticut W. E. Britton (June 23). "Seemingly more numerous than usual at New Haven, Milford, Winsted, and Weathersfield."

New York P. J. Parrott (May 28). "Beetles beginning to puncture young fruit at Geneva."

C. R. Crosby and assistants report that the beetles were first observed in Orleans County on May 20; by June 18 they had become numerous and destructive in a few orchards in this county. Very abundant and injurious in Albany County; seriously abundant in Columbia County. In Wayne County, by June 24, 50 per cent of the fruit had been damaged on one side of an orchard at Sodus, the side ~~xxxx~~ infested being nearest to Woodland. Also very numerous and destructive in Nassau, Ulster, Orange, and Genesee Counties."

L. F. Strickland. "First adult observed on May 24 in Niagara County. By June 18, severely numerous in several orchards."

W. H. Wellhouse (May 13). "Actively egg laying on young apricot fruit in vicinity of cherry at Ithaca."

F. Z. Hartzell (June 18). "Adults now laying eggs, but not common in Chautauque County."

Delaware J. J. Adams (April 26). "From 3 to 20 per cent of the apples about Bridgeville were found to be infested. Injury more common in orchards surrounded by woodlots and more noticeable in the dusted than in the sprayed tracts."

West Virginia D. T. Gray (April 20). "Damage to fruit of apples worse than ever observed before in Marshall and Tyler Counties."

E. C. Sherwood (June 2). "Heavy infestation; larva stage developed on both plums and cherries. Did not have time to make counts, but I think at least 75 per cent of the fruit is damaged at Parkersburg, Wood County."

North Carolina Franklin Sherman (May 21). "Found first adult of the season on March 19. On May 21 also found an adult (not teneral) apparently of hibernated generation. This indicates for this year a seasonal range of overwintered specimens of 64 days."

- Indiana J. J. Davis (June 15). "The plum curculio attacking apples, etc., is exceedingly abundant, partly due no doubt to the fact that some of the orchardists failed to make their regular spray applications."
- Missouri Leonard Haseman and assistants (June 15) report worst outbreaks since 1906, damage ranging from very slight to 100 per cent; larvae are now leaving the apples and entering the soil in rearing cages.
- Alabama W. E. Hinds (June 2). "Plum curculio now starting second brood attack in southern Alabama."

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouché)

- New York C. R. Crosby and assistants, report this insect dangerously abundant around Medina, Orleans County, with a slight infestation in Wayne County and Genesee County, and scarce in Albany County."
- F. Z. Hartzell (June 18). "Not yet observed in Chautauque County."

BROWN PLUM APHIS (Hysteroneura setariae Thomas)

- Indiana J. J. Davis (June 15). "The rusty brown plum aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."
- Georgia O. I. Snapp (May 4). "Quite numerous on wild and cultivated plums this spring in Central Georgia, damage running to as high as 100 per cent of the foliage."
- Missouri Leonard Haseman (June 2). "Correspondence from Overland, Mound City, and Orick, indicate that this insect is so abundant as to check the growth of plum trees. The fruit has already been destroyed by freezing weather."

MEALY PLUM APHIS (Hyalopterus arundinis Fab.).

- New York L. F. Strickland (June 18). "Only one slight infestation noted in Niagara County."
- California T. D. Urbahns (May 4). "More abundant than usual in the Sacramento Valley, and extremely destructive. Young trees are also suffering by the destruction of foliage. Damage estimated from one to 50 per cent in different orchards. Natural enemies are becoming abundant."

BUD MOTH (Tmetocera ocellana Schif.)

New York G. E. Smith (May 20). "Observed injuring plums on two farms, plums being very near apple trees in Orleans County."

Paratetranechus pilosus Can. & Fanz.

New York L. F. Strickland (May 28). "Foliage becoming infested in Niagara County."

R A S P B E R R Y

RASPBERRY FRUIT-WORM (Byturus unicolor Say)

New York J. B. Palmer (May 30). "Eggs abundant, beetles rare in Ulster County. (June 11) larvae are beginning to be found. (June 18) Beetles still present in late blossoms, larvae common, but not as abundant as would be expected. Eggs still being laid on the green berries. First two pickings in an infested patch are discouragingly small. The berries are **crumbly**, small, misshapen and given ~~me~~ an exceedingly inferior appearance to the baskets. One grower pulled the bushes out instead of harvesting the fruit. (June 25) Beetles still to be found in small numbers."

H. D. Hammond (June 13). "Abundant in the northeastern part of Orange County."

RASPBERRY SAWFLY (Monophadnoides rubi Harris)

New York J. B. Palmer (June 18). "Larvae occasionally observed in Ulster County."

F. Z. Hartzell (June 18). "Common and injurious in small plantings in Chautauqua County."

Oregon A. L. Lovett (June 17). "Raspberry sawfly above the average in abundance in Western Oregon, Lane County and northward. Larvae appeared first of May. Loganberries and raspberries generally attacked."

STRIPED TREE CRICKET (Oecanthus nigricornis Walk.)

New York J. B. Palmer (June 18). "Egg punctures occasionally observed in Ulster County."

F. Z. Hartzell (June 18). "Not common in Chautauqua County. Eggs are now hatching."

TWO-SPOTTED OBEREA (Oberea bimaculata Oliv.)

New York H. W. Fitch (June 18). "A few observed on raspberries in Albany County."

RASPBERRY ROOT-GALL (Diastrophus turgidus Bass.)

New York M. D. Leonard (May 9). "Galls of this insect were received from Tully."

SPITTLE INSECTS (Cercopidae)

Oregon A. L. Lovett (June 17). "Samples of blighted loganberry tips received from Marion County. The cane above the point of attack was blighted and dead; reported as fairly prevalent over a limited area."

WHITE GRUB (Phyllophaga tristis Fab.)

New York J. B. Palmer (May 17). "Reported from Marlboro, Ulster County, as causing severe damage to the foliage by the beetles feeding during the night. As many as three to four of the beetles could be found at the base of each hill in the top inch of soil."

B L A C K B E R R Y

RED-NECKED CANE-BORER (Agrilus ruficollis Fab.)

New York C. R. Crosby (May 23). "Injury to blackberries reported from Luzerne."

C U R R A N T

CURRENT APHIS (Myzus ribis L.)

New York P. J. Farrott (May 28). "I have seldom observed more conspicuous damage at Geneva."

L. F. Strickland (June 18). "Present in small numbers in Niagara County."

F. Z. Hartzell (June 18). "Rather common in Chautauqua County"

C. R. Crosby and assistants report this insect as unusually abundant and injurious in Orleans, Ulster, Genesee, and Albany Counties.

Indiana J. J. Davis (June 15). "The currant aphid has been a common species this year."

IMPORTED CURRANT WORM (Pteronidea ribesi Scop.)

New York C. R. Crosby and assistants report this insect as quite abundant and destructive in Albany, Ulster, Nassau, Orleans, and Genesee Counties."

F. Z. Hartzell (June 18). "Common in Chautauque County."

Nebraska Myron H. Swenk (May 10). "Began injuries about May 10 and promised to be quite injurious this spring."

NATIVE CURRANT WORM (Gammonychus appendiculatus Hartig)

New York F. Z. Hartzell (June 18). "Common and destructive in some plantings in Chautauque County."

CURRANT STEM-GIRDLER (Janus integer Norton)

New York J. B. Palmer (June 18). "Observed in small numbers in several plantings in Ulster County."

D. V. Rivenburg (June 18). "Some observed in Columbia County."

FOUR-LINED LEAF-BUG (Poecilocapsus lineatus Fab.)

New York C. R. Crosby and assistants report this insect as being fairly numerous in Orleans, Ulster, Tompkins and Wayne Counties.

F. Z. Hartzell (June 18). "Plentiful in a few plantings in Orleans County."

CURRANT BORER (Sesia tipuliformis Clerck)

New York G. E. Smith (June 18). "Plentiful in a few plantings in Orleans Co."

E L D E R B E R R Y

FOUR-LINED PLANT-BUG (Poecilocapsus lineatus Fab.)

~~PLANT~~

Indiana H. F. Dietz (June 15). "The four-lined plant-bug was found abundant in the vicinity of Bacon's Swamp doing its characteristic damage to various weeds, such as burdock and elderberry. So far no reports of its damage to currants or hardy perennials have been received by this office."

P E C A N

FALL WEBWORM (Hypphantria cunea Drury)

Louisiana J. C. Bridwell (June 20). "Pecan orchards between Baton Rouge and New Orleans were noticed as being entirely skeletonized by this insect. Similar damage also noted to willows."

G R A P E

GRAPE PLUME MOTH (Oxyptilus periscelidactylus Fitch)

- New York C. R. Crosby and assistants report the larvae as injuring grapes to a slight extent at Ithaca; doing considerable damage in May in many vineyards in Ulster County; present in small numbers in Columbia, Orange and Niagara Counties."
- F. Z. Hartzell. "Have not observed this insect this year in Chautauqua County."
- Delaware C. O. Houghton (June 1). "About as numerous as usual at Newark."

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

- New York E. R. Bird (May 31). "Captured a moth at Fonda."
- Delaware C. O. Houghton (June 5). "Observed this insect ovipositing at 2 p. m. in bright sunshine. Eggs were apparently laid on the vine, not on the leaves. Observation made at Newark."

GRAPE-BERRY MOTH (Polychrosis viteana Clem.)

- New York F. Z. Hartzell (June 18). "Larvae now working in the grape clusters in Chautauqua County. Usually scarce in this county."

GRAPE LEAFHOPPER (Erythroneura comes Say)

- New York C. R. Crosby and assistants (June 14) report that nymphs were first observed in Ulster County. (June 18) Heavy infestation in Columbia County in which county the adults were very numerous on May 28. Adults also numerous in Orange County on this date.
- F. Z. Hartzell (June 18). "Rather scarce in eastern part of Chautauqua County, but common in the western part. Nymphs and adults both present."
- L. F. Strickland (May 28). "Of minor importance this year in Niagara County. (June 18) About half as abundant as usual; the worst infested leaves having only from 10 to 15 hoppers on each."
- Ohio G. A. Runner (May). "Grape leafhoppers unusually abundant in all sections of the northern Ohio grape belt. The emergence from hibernation commenced during the warm weather of March. The weather was unusually mild."
- Nebraska M. H. Swenk (June 15). "Grape leafhoppers put in an appearance abundantly early in June in some localities in the State."

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

- Massachusetts H. T. Fernald (June 23). "Rose-chafers are unusually abundant and are doing some injury to young fruit trees, small fruits, grapes, and roses."
- R. A. Van Meter. "Doing considerable damage in some sections in the eastern part of the State."
- E. R. Farrar (June 14). "Abundance about as usual in South Lincoln."
- Connecticut M. P. Zappe (June 24). "Practically the entire crop of grapes ruined in a four-acre vineyard at Hamden."
- New York C. R. Crosby and assistants report this insect as serious in a few vineyards in Ulster, Nassau, Columbia, Clinton, and Onondaga, Counties, as quite scarce in Chautauqua County, and not observed in Niagara County.
- Ohio H. A. Gossard (June 23). "The rose beetle has been more abundant this season than last. We have probably received more inquiries about it this season than for six or seven years past."
- Indiana J. J. Davis (June 15). "The rose beetle has been unusually abundant and has been reported from places in the southwestern end of the State (Evansville) to the extreme northeastern end (Angola). It was reported damaging grape and corn, also a report of death of young chickens from eating these beetles."

~~GRAPE BOG WORM~~ (Fidia viticida Walsh)

- New York D. V. Rivenburg (June 18). "Present to a slight extent in Columbia County."
- F. Z. Hartzell (June 18). "Indications are that we will have a serious infestation of this insect in Chautauqua County. Adults began to emerge June 16."

GRAPE FLEA-BEETLE (Valtica chalybea Illis.)

- New York F. Z. Hartzell (June 18). "Very scarce in Chautauqua County. Larvae are now on the leaves. No reports of injury this season."
- Indiana H. F. Dietz (June 15). "One insect which was abundant last year but which seems to be on the decline this year is the grapevine flea-beetle. Last year during the month of May a large number of calls regarding this insect were received, but this past month only a dozen inquiries have been made. Field inspections during the month have also failed to show this insect as abundant as it was last year."

FOUR-MARKED LEAF-BEETLE (Cryptocephalus 4-maculatus Say)

New York J. B. Palmer (June 7). "One adult collected on Concord grapes at Milton."

GRAPEVINE APHIS (Macrosiphum illinoisensis Shim.)

West Virginia D. H. Questal (June 1). "Observed attacking grapes in Rome County."

Indiana J. J. Davis (June 15). "The grape aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

GRAPE BLOSSOM MIDGE (Contarinia johnsoni Sling.)

New York D. V. Rivenburg (June 18). "Scattering infestation in Columbia County."

L. F. Strickland (June 18). "Scarce in Niagara County."

F. Z. Hartzell (June 18). "A few observed; larvae have now gone into soil. Most grapes have blossomed by this time."

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

New York F. Z. Hartzell (June 18). "Eggs found occasionally on grape leaves in Chautauque County."

C I T R U S

CITRUS MEALYBUG (Pseudococcus citri Risso).

Florida Jeff Chaffin (June 6). "Much more abundant than usual at Orlando. 5 per cent of the mealybugs were destroyed by Laetilia coccidivora. Owing to dry spring (June 8) mealybugs are doing a large amount of damage throughout the citrus belt. Complaints are coming in every day from all over the citrus sections."

Wilmon Newell (June 20). "Much more abundant than usual at Lake Wales; 5 per cent of the mealybugs were destroyed by Laetilia coccidivora."

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

COTTON BOLL WEEVIL (Anthonomus grandis Boh.)

South
Carolina

G. M. Anderson (May 12). " Distribution wide in the coastal counties; specimens have been sent in from many of the other counties."

Texas

M. C. Tanquary (June 18). " Reports from various sections of the State indicate boll weevil infestation to be very much heavier than usual at this time of the year. A large percentage of the earlier squares are being punctured."

CORN ROOT-APHIS (Acyrtosiphon maidis Forbes)

South
Carolina

C. McLaurin (May 5). " Local distribution in Marion County; injury not serious."

GARDEN SLUG (Agriolimax agrestis L.)

North
Carolina

Franklin Sherman (May 16). " One complaint indicating injurious abundance to young cotton plants in the coastal region."

WHITE GRUB (Phyllophaga lanceolata Say)

Texas

M. C. Tanquary (June 18) " Adults reported as occurring in immense numbers and doing serious damage to cotton in Williamson County."

TOBACCO

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida F. L. Chamberlin (June 18) . " During the early part of June shade tobacco about Quincy was rather severely damaged by this insect."

~~BROWN~~ COTTON BUG (Euschistus servus Say)

Florida F. L. Chamberlin (June 18) " This pentatomid was very prevalent on shade-grown tobacco at Quincy."

CUTWORMS

South Carolina C. McLaurin (April 20). " Local distribution in Marion County; serious injury."

C O R R E C T I O N

In the last number of the Bulletin the crediting to T. C. Barber of the discovery of Aclerda sp. as attacking sugar-cane was a mistake; the discovery should have been credited to E. R. Barber.

TRUCK CROP INSECTS

POTATO AND TOMATO

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

- Maine Edith M. Patch (June 16) "Complaints farther south in the State are coming in concerning root-maggots, especially in underground stems of bean plants."
- Massachusetts H. T. Fernald (June 23) "The seed-corn maggot has not appeared in replanted onion fields."
- New York H. C. Hockett (May 28) "Maggots have been found in a few plantings of potatoes but not in sufficient numbers to cause much loss in Nassau County. (June 18) Present in all stages."

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say).

- Maine Edith M. Patch (June 16) "Colorado potato beetles numerous and egg-laying."
- New York C. R. Crosby and assistants (May 27) "Beetles now depositing eggs at Eden. (June 10) Eggs are now very numerous but no larvæ have yet been observed. (June 11) Many eggs have now hatched in Orange County. (June 14) Eggs numerous. First observed to have hatched today. Egg laying in full sway in Wayne County, Genesee, Nassau, Albany, Onondaga, Orleans, Seneca and Suffolk Counties, causing considerable injury to early planted fields in Onondaga County. "
- New Jersey D. E. Fink (June 7) "Abundant this year and doing its usual amount of damage. "
- Delaware W. C. Newton (May 14) "Very abundant and doing much damage at Bridgeville. (May 19) "Eggs now very abundant."
J. F. Adams (June 3) "Larvae very abundant at Bridgeville."
- West Virginia B. H. Questel (June 1) "Normal outbreak at Spencer in Roane County."
- South Carolina C. L. Baxter (April) "Widely distributed over Beaufort region."
- Ohio T. H. Parks () "Unusually abundant in many sections of Ohio."
H. A. Gossard (June 23) "Is more numerous than we expected this season. They were comparatively scarce last year but must have hibernated in excellent condition, judging from the number that are now in sight."

- Wisconsin S. B. Fracker (June 24) "Best reporters nearly all state that potato beetles are unusually early, active and common throughout the State."
- South Dakota H. C. Severin (May 23) "Just emerging from winter quarters at Brookings"
- Nebraska M. H. Swenk (May 21) "Beginning the fourth week in May, the Colorado potato beetle has made a considerable amount of spraying of potatoes necessary."
- Missouri L. Haseman (June 15) "On June 14 adults of the second generation appeared at Columbia far less abundant than usual and doing practically no damage."

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

- Massachusetts R. A. Van Meter (June 17) "Numerous throughout the State."
- New York E. P. Felt (May 25) "F. J. Rose, of Genesee County, reports that a small black flea-beetle is pretty numerous on tomato plants at South Byron."
- Roy Latham (June 1) reports this insect as more abundant on potatoes and other crops than last year at Orient. These flea-beetles first appeared on May 21 in large numbers, fields near woods suffering the most. "
- L. F. Strickland (June 11) "Injury very severe in Niagara County to early potatoes." (June 22) "I have never seen more serious injury even in late season than is being produced by these insects."
- F. Z. Hartzell (June 18) "Have not observed this insect in Chautauqua County. It must be very scarce."
- C. R. Crosby and assistants (June 11) "Abundant on young plants in Orleans County. So far, the most injurious pests to potatoes this season in Nassau County. Still destructive on new foliage at Ithaca, Tompkins County. June 18, some damage but not serious to potatoes in Onondaga County; considerable damage to tomatoes in this country. Not serious in Nassau County. Numerous in Genesee, Orleans, Seneca, Ulster, Albany and Wayne Counties. "
- New Jersey D. E. Fink (June 7) "The potato flea-beetle is very abundant the present year and is doing very noticeable injury."
- Delaware J. F. Adams (May 27) "Doing considerable damage at Newark."
- Nebraska M. H. Swenk (May 21) "Reported doing its characteristic injury to potato foliage from several counties."

THREE-LINED POTATO BEETLE (Lema trilineata Oliv.)

- New York H. C. Hockett (June 18) "Adults observed in Nassau County."
- POTATO APHIS (Macrosiphum solanifolii Ashm.)
- Maine E. M. Patch (June 16) "I have had this insect under observation here this spring. It is still abundant on rose. Lady beetles and syrphid maggots rather plentiful. Parasitic mites also feeding on this aphid. If I should judge, we must be a month behind the Long Island schedule. Potatoes only about 4 inches above ground and still being hilled."
- Connecticut M. P. Zapp (June 20) "Present in small numbers at Hamden."
- New York C. R. Crosby and assistants (June 15) "H. C. Hockett reports potato aphid appearing in Nassau County (Telegraphic reports sent to New England States and Pennsylvania)."
(June 20) "Both pink and green nymphs found in Nassau County. Numbers are becoming serious but no damage done as yet."
(June 21) "A few lice found in a large field at Riverhead, L.I."
(June 25) "Becoming more noticeable daily on plants. Appeared first on blossom shoots but have not migrated to the under sides of leaves in Nassau County."
- New Jersey D. E. Fink (June 7) "The potato aphid is making its first appearance and bids fair to become injurious by the end of the month. The weather conditions have been extremely favorable for its increase during the past two weeks."
- West Virginia E. C. Sherwood (May 25) "Very few found at Keyser in Mineral County."
P. W. Dayton (May 31) reports the first appearance at Thomas, Tucker County, about 4 percent of the plants being infested.
(June 4) "Very few in numbers at Fairmont, Marion County."
(June 7) P. W. Dayton reports about 25 percent of the plants are infested at Thomas, Tucker County.
(June 14) "Potatoes have been sprayed twice in this county."
(June 21) E. C. Sherwood reports heavy infestation reduced by a heavy rain at Wheeling in Ohio County."
- APPLE LEAFHOPPER (Empoasca mali) LeBaron
- Ohio T. H. Parks (June 1) "Adults commenced migrating to potatoes about June 1; a few nymphs present June 17."
- Wisconsin J. E. Dudley, Jr. (June 10) "Leafhoppers have swarmed to the fields, heavily infesting all potatoes and beans at Madison, Dane County."
- COMMON STALK-BORER (Ph. lineata nitela Guen.)
- New York H. C. Hockett (June 25) "Serious injury reported in one patch in Nassau County."

West
Virginia

W. E. Rumsey (June 6) "Correspondent reports normal outbreak of this insect at Lumberport, Harrison County."
(June 12) "Correspondent reports serious outbreak at Cairo, Ritchie County."

CORN EARWORM (Chloridea obsoleta Fab.)

Florida

S. B. Walker (June 1) "More abundant than usual. Two percent of the crop has been damaged at Florida City."

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Massa-
chusetts

W. F. Thompson (May 15) "Much more abundant than usual in the Boston district, as high as 50 eggs to a plant, retarding all growth, with a few plants lost in best gardens. Growers experimenting with tarred felt disks and nitrate of soda."

New York

P. J. Parrott (May 28) "Radishes seriously infested. Cabbages beginning to show injury during the past week at Geneva."
(June 11) "Dry weather and maggots have severely attacked cabbage seedlings. There is a marked contrast between treated and untreated plats."

C. R. Crosby and assistants (May 28) "Exceedingly destructive at Eden. Reports from Nassau County indicate that there was a serious loss during April to plants set in the field but the cold rains and cool temperatures did more for saving the crop than any amount of treatment. In a good many places the plants are living on secondary roots which have taken the place of the tap root which was destroyed; doing considerable damage in Orleans County."

(June 15) "The growers say they have never seen the destruction by the cabbage maggot as severe as it is this year. In several of the fields one-third of the plants are already gone and the maggots are still at work. In some spots in these fields the maggots get away with over half the plants at Eden."

(June 18) "Numerous in seed beds in Wayne County. Destructive to early plantings in gardens in Orleans County, also numerous in Albany and Nassau Counties."

F. C. Hartzell (June 18) "Not common in Chautauqua County."

West
Virginia

E. C. Sherwood (June 21) "Turnips, cabbage and radishes, about 30 per cent infested at Wheeling, Ohio County. Turnips most seriously injured, maggot being followed by a soft rot."

Ohio

H. A. Gossard (June 23) "The cabbage maggot is the subject of very frequent inquiry, though early radishes about Wooster were less troubled than usual by this insect."

Indiana J. J. Davis (June 15) "The cabbage maggot has been very abundant and destructive in the northern half of Indiana. Absolute control has been obtained by two applications of kerosene sublimate solution in our tests at Ft. Wayne and Hammond. Dusts containing 1 percent kerosene sublimate were also effective."

Oregon L. P. Rockwood (June 11) "More abundant than usual at Forest Grove. Many complaints have come from ~~home~~ gardeners and one from a poultryman where maggots were attacking kale."

A. L. Lovett (June 17) "Injurious abundance, possibly above the average everywhere and doing serious injury."

IMPORTED CABBAGE WORM (Pontia rapae L.)

New York C. R. Crosby and assistants (May 28) "This insect is fairly abundant at Ithaca, some larvae being newly hatched, others about one-half inch long." (June 18) "Common but not destructive; found in all stages in Nassau County; not numerous in Orleans County. A few butterflies observed in Niagara County."

CABBAGE APHIS (Brevicoryne brassicae L.)

New York P. J. Parrott (June 22) "Very abundant in seed beds at Geneva, where it is causing much damage."

H. C. Hockett (June 18) "Becoming abundant and destructive in certain fields in Nassau County. (June 25) Becoming daily more noticeable in seed beds."

G. E. Smith (June 18) "Numerous in a few garden plantings in Orleans County."

Nebraska M. H. Swenk (June 1) "Injury by the cabbage aphid began about June 1."

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Nebraska M. H. Swenk (May 18) "Injurious activity noticed as early as May 18."

STRIPED FLEA-BEETLE (Phyllotreta vittata Fab.)

New York E. P. Felt (May 30) "A. L. Brower reports this insect as attacking crucifers more generally than other vegetables, causing an estimated damage amounting to 30 percent in Madison County."

CABBAGE SEED WEEVIL (Ceuthorrhynchus quadridens Panz.)

New York T. H. Vogel (June 11) "Considerable damage done this season to the cabbage seed crop at Mattituck. Larvae now pupating and a few adults have been found."

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus) Say)

Massachusetts

R. A. Van Meter (June 17) "Increasing in abundance in the Dighton district of Bristol County."

New York

D. B. Rivenburgh (June 18) "Serious on certain farms in Columbia County."

J. B. Palmer (June 18) "Abundant on William Belts everywhere in Ulster County. Other varieties are comparatively free."

Delaware

J. F. Adams (April 13) "Damaging 3 percent of the crop at Greenwood."

STRAWBERRY CROWN-GIRDLER (Otiorynchus ovatus) L.)

Oregon

A. L. Lovett (June 17) "Childs reports from Hood River that this insect is spreading to new plantings. Damage is considerable, the yield having been cut out from 20 to 50 percent."

STRAWBERRY FLEA-BEETLE (Altica ignita Illig.)

New York

G. E. Smith (June 18) "Very abundant in Orleans County,"

WHITE GRUBS (Phyllophaga sp.)

New York

C. R. Crosby and assistants (June 18) "Reported as doing slight amount of damage in Albany and Columbia Counties."

ABBREVIATED WIREWORM (Cryptohypnus abbreviatus Say)

~~New York~~

~~M. D. Leonard (June 7) "Beetles reported as eating into ripe berries at Addison,"~~

ROSE-CHAFFER (Macrodactylus subspinosus) Fab.)

New Jersey

D. E. Fink (June 7) "The rose-chaffer is now doing injury to the leaves of strawberry, and because of the fact that the crops are being harvested at the present time, it is impossible to experiment with spray on the leaves. It has also been observed feeding on the blossoms of string beans. Very abundant this year."

STRAWBERRY LEAF-ROLLER (Ancylis comptana Fernald.)

Nebraska

M. H. Swenk (May 21) "During the fourth week in May there was considerable injury by the strawberry leaf-roller in Douglas, Washington, York, Boyd and other Counties of eastern Nebraska."

OBSOLETE-BANDED STRAWBERRY LEAF-ROLLER (Archips obsoletana) Walk.)

New York

D. B. Rivenburgh (June 18) "Not important this year in Columbia County"

F. Z. Hartzell (June 18) "A few present but not common. Larvae nearly full grown in Chautauqua County."

STRAWBERRY CROWN-MINER (_____)

Nebraska M. H. Swenk (May 15) "Another new pest found for the first time in the State this spring is the strawberry crown-miner (Anarsia lineatella of authors) which during April and early May did such damage to some strawberry beds in Saline County by boring into and hollowing out the crowns of the plants. Some patches were completely killed and had to be dug out."

Tarnished Plant-bug (Lygus pratensis L.)

New York C. R. Crosby and assistants (June 18) "Adults numerous and destructive in a few plantings in Albany and Orleans Counties."

STRAWBERRY ROOT-LOUSE (Aphis forbesi Weed)

New York D. B. Rivenburgh (June 18) "A few present in Columbia County."

EARLY STRAWBERRY SLUG (Empria fragariae Roh.)

Nebraska M. H. Swenk (May 14) "The early strawberry slug began serious injury in southern Nebraska on this date and promises to be quite injurious this spring."

GARDEN SLUG (Agriolimax agrestis L.)

Nebraska M. H. Swenk (May 21) "Reports of injury to strawberries by the slug were also received."

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Massachusetts H. F. Thomas (May ___) "More abundant than last year in the Boston district. The season earlier than usual."

Connecticut W. E. Britton (June 23) "More abundant than usual around New Haven."

New York E. P. Felt (June 6) "Asparagus beetle grubs were somewhat abundant and full-grown at Nassau."

C. R. Crosby and assistants (May 28) "Beetles abundant and egg-laying common at Ithaca. (June 2) Beetles damaging the plants much more seriously than last year at Lackawanna. (June 18) reports from several localities in Columbia County. Larvae now feeding on the leaves in Chautauqua County. Eggs, larvae and adults present in Nassau County. Present in small numbers in Wayne County. (June 25) Reported as injurious in Nassau County."

Indiana J. J. Davis (June 15) "Asparagus beetle has been quite abundant in northwestern Indiana."

- Wisconsin C. L. Fluke (June 4) "Beetles appeared earlier this year than usual, injuring the earliest cuttings. Fifty percent of the crop unmarketable and nearly every stalk injured in southern Wisconsin."
- Oregon A. L. Lovett (June 17) "Introduced into the trucking sections of Multnomah County in 1919. Has spread steadily and injury has increased. Now very serious throughout the trucking sections adjacent to Portland. Eggs and beetles received from May 20 to June 6."

12-SPOTTED ASPARAGUS BEETLE (Crioceris 12-punctata L.)

- New York C. R. Crosby and assistants (June 18) "Present in small numbers in Tompkins Ulster and Nassau Counties."

BEANS

MEXICAN BEANBEETLE (Epilachna corrupta Muls.)

- Alabama W. E. Hinds (June 2) "Second generation now starting and heavy damage in prospect. The species has been found recently in a number of localities in northwestern Georgia and at 11 miles north of Chattanooga, Tenn., beside a few other places a short distance outside of the 1920 known infestation in Alabama."
- J. E. Graf (June 19) "Have found infestation in Jackson and Morgan Counties. (June 26) Infestations found in Fayette, Marion and Winston Counties."
- Georgia J. E. Graf (June 21) "Additional area infested includes Carroll, Catoosa, Cherokee, Douglas, Gordon, Murray and Whitfield. (June 26) Infestation found in Dawson, Fannin, Lumpkin and Pickens Counties."
- Tennessee J. E. Graf (June 21) "Infestation found in Cumberland, Grundy, Marion, McMinn, Polk, Rhea and Roane Counties. (June 26) Infestation found in Hamilton, Coffee, Franklin, Lincoln, Loudon and Monroe Counties."
- Kentucky J. E. Graf (June 30) (telegraphic dispatch) "Sitton reports beetle one mile east Jellico Creek Whitfield County Kentucky."

BEAN WEEVIL (Bruchus obtectus Say)

- New York L. F. Strickland (June 18) "One case of severe infestation of seed beans observed in Niagara County."
- F. Z. Hartzell (June 18) "Common in Chautauqua County."

BEAN LEAF-BEETLE (Cerotoma trifurcata Forst.)

- Alabama W. E. Hinds (June 2) "Very abundant and generally distributed throughout the State."

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

- South Carolina A. F. Conradi (May 19) "Sent to this office from Bethune, S. C."

APPLE LEAFHOPPER (Empoasca mali LeB.)

Wisconsin J. E. Dudley, Jr. (June 10) "Apparently more abundant than usual at Madison."

PEAS

PEA APHIS (Illinoia pisi Kalt.)

Massachusetts H. F. Thompson (May ___) "In early spring the aphid seemed to be abundant on most crops that they usually attack. Their progress has been less rapid than anticipated but ladybugs are getting better control than in 1920."

New York C. R. Crosby and assistants (June 11) report this insect as abundant in Nassau County. (June 18) Present in small numbers in Wayne County. (June 25) Becoming more noticeable daily in Nassau County.

F. Z. Hartzell (June 18) "Common in Chautauqua County."

GARDEN FLEAHOPPER (Halticus citri Ashm.)

New York F. Z. Hartzell (June 18) "Present in very small numbers in Chautauqua County."

MYRIAPODS (Scutigera sp.)

Oregon A. L. Lovett (June 17) "Symphylids abundant in gardens during late May and up to the present time. Distribution is general. It may attack all kinds of sprouting seed, being particularly partial to peas and beans. Growing plants also suffer injury."

CUCUMBER

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New York C. R. Crosby and assistants (June 10) "Heavy losses reported on two farms. The entire planting was destroyed by the beetles getting under the crusts of earth and destroying the plants before they showed above ground at Eden. (June 18) Beetles have become less numerous at Eden, considerable damage being done in Columbia, Albany, Onondaga and Niagara Counties. A few observed in Wayne and Nassau Counties."

West Virginia W. E. Rumsey (June 10) "Correspondents report this insect as being abundant at Roanoke."

Ohio T. H. Parks (_____) "Very bad this year. The calcium arsenate and gypsum dusting mixture is being used successfully."

H. A. Gossard (June 23) "It seems to be quite abundant; in fact, is probably more numerous than in average years."

Indiana J. J. Davis (June 15) "The striped cucumber beetle has been abundant everywhere in the State and has been effectively controlled by the use of

calcium arsenate and gypsum.

- Wisconsin J. E. Dudley, Jr. (June 1) "Apparently a heavier infestation than usual. First emerged adult seen on May 5; first seen in the field on May 22 at Waupaca."
- Texas M. C. Tanquary (June 18) "Reported as being destructive to watermelons, cucumbers and cantaloupes in Franklin County."

MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Delaware J. F. Adams (June 3) "Beetles abundant, often a dozen to a hill. Many of the plants with only the first true leaves killed. Damage estimated at 5 percent at Houston."
- Missouri L. Hazeman and assistants (June 17) "The striped beetle for the past 4 weeks has appeared in southeastern Missouri in the melon section in such numbers as to threaten the crop. Dusting with nico-dust and arsenicals has largely saved the commercial crop. At Columbia they arrived on June 2 or 3, often 50 to a hill."

12-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

- Alabama W. E. Hinds (June 2) "Very abundant in injuring melons, corn, etc."
- Missouri L. Hazeman and assistants (June 16) "Corn root-worm reported from Cooper County, also reported as serious in southeastern Missouri."

BANDED FLEA-BEETLE (Systema taeniata Say)

- Missouri L. Hazeman (June 11) "Practically ruined gardens here on wheat stubble land. Much more numerous than usual."

SQUASH LADYBIRD (Epilachna borealis Fab.)

- Arkansas W. J. Baerg (June 6) "The insect first noted on this date not very numerous. This is the first time this insect has been found attacking crops to any extent in this State."

COTTON APHIS (Aphis gossypii Glov.)

- Texas D. C. Palmer (June 24) "The Melon aphid appears to be unusually abundant and has damaged the local melon crop at Uvalde from 50 to 75 percent."

SQUASH

SQUASH-VINE BORER (Diachasma satyriniformis) Hbn.)

- North Carolina Franklin Sherman (May 10) "The first adult of the season noted on young squash plants today."

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Wisconsin J. E. Dudley, Jr. (June 2) "Very heavy infestation. Heavy dusts of several kinds finally repelled or destroyed the majority of the beetles."
Delaware J. F. Adams (June 3) "Considerable foliage injury at Houston."

ONION

ONION MAGGOT (Hyalemyia antiqua Meig.)

- New York C. R. Crosby and assistants (June 18) report this insect as doing rather serious injury in the northern part of Columbia County. Present in less destructive numbers in Nassau, Erie and Orange Counties."
Oregon A. L. Lovett (June 6) "Many complaints being received from onion growers in Washington County."

ONIONTHRIPS (Thrips tabaci Lind.)

- Massachusetts - H. G. Fernald (June 23) "Onion thrips is quite abundant in the Connecticut Valley."
New York H. W. Fitch (June 18) "Quite numerous and causing some damage in Albany County."

DARK-SIDED CUTWORM (Euxoa nassoria Harr.)

- New York C. R. Crosby and assistants (June 19) report serious injury in small areas in Orange County. Has stopped working after destroying several acres at Williamson.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

- New York H. C. Hockett (June 14) "About half-grown caterpillars doing some damage on small plantings."

BEETS & SPINACH

SPINACH LEAF-MINER (Pagomya hyosevani Panz.)

- New York C. R. Crosby and assistants (May 28) report that it is rapidly putting an end to the further marketing of the crop in Nassau County. Beet leaves mined to a considerable extent in Tompkins County. (June 13) Slight damage in Oneida and Albany Counties. Plentiful in garden plantings in Orleans County. (June 20) Present in all stages in Nassau County.

RHUBARB

RHUBARB WEEVIL (Lixus concavus Say)

- New York J. D. Detwiler (May 28) "First specimen of the season found at Ithaca."

Indiana J. J. Davis (June 15) "Has been reported as damaging; reported several times from northern Indiana."

PLANTAIN FLEA-BEETLE (Dibolia borealis V.)

New York J. D. Detwiler (May 28) "Fairly numerous and leaves riddled to a slight extent at Ithaca."

WILLOW FLEA-BEETLE (Crepidodera ...)

New York J. D. Detwiler (May 20) "Damaging leaves to a slight extent at Ithaca."

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

S P R U C E

S P R U C E G A L L A P H I S (Adelges abietis Kalt.)

New York E. P. Felt (June 9). "Spruce cone galls were fully developed at Newark on June 8, and at Mt. Vernon on June 9. Some contained adults and numerous young."

G. W. Herrick (May 28). "A number of spruce hedges about Ithaca are infested with the galls. These are just forming and are numerous."

M A P L E

C O T T O N Y M A P L E S C A L E (Pulvinaria vitis L.)

Connecticut W. E. Britton (June 23). "Reported as attacking silver maple at Stanford."

New York M. D. Leonard (June 10). "Trees infested at Bemus Point."

West Virginia W. E. Rumsey (June 8). "Reported as abundant at Buckhannon, Upshur County. (June 12) Reported as serious in Martinsburg, Berkley County. (June 13) Normally abundant at Huntington, Campbell County."

Ohio H. A. Gossard (June 23). "Cottony maple scale has been more abundant than has been the case for many years."

Indiana H. P. Dietz. "Reports of maple scale have been received from Anderson, Columbia City, Newcastle, Rochester, and parts of Indianapolis."

F. N. Wallace (June 15). "Cottony maple scale is serious in cities and towns this year, practically all of the reports coming from localities north of Indianapolis."

J. J. Davis. "Cottony maple scale has been reported as exceptionally abundant from almost every county in the northern half of the State."

Wisconsin H. F. Wilson (June 20). "After a period of three or four years in which we have had very few reports on cottony maple scale it is again appearing in great abundance; so far this year injuries do not appear to be serious, probably due to the fact that we have had considerable rain. However, it is to be expected that a good many trees will suffer serious injury through the summer, as this is always the case when this insect is not held in check by parasites."

Nebraska M. H. Swenk (June 15). "The shade trees at Hastings are reported to have developed a local outbreak of the cottony maple scale during June."

WOOLLY MAPLE LEAF-SCALE (Phenacoccus acericola King)

New York E. P. Felt (June 5). "R. E. Horsey reports that maple Phenacoccus occurs on a block and one half of hard maples in Mt. Vernon.

TERRAPIN SCALE (Lecanium microfasciatum Perg.)

New York C. R. Crosby and assistants (May 30). "Heavily infested twigs collected at Elmira. (June 2) Trees badly infested at Middletown. (June 18) Trees badly infested in Chemung County.

West

Virginia W. E. Rumsey (June 11). "Reported from Wellsburg, Brook County."

Ohio H. A. Gossard (June 23). "Maple terrapin scale has been more abundant than has been the case for many years."

MAPLE CHAITOPHORUS (Periphyllus aceris L.)

Indiana J. J. Davis (June 15). "The maple Chaitophorus is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

SILVER MAPLE LEAF-MINER (Phyllocoptes quadripes Shim.)

New York C. R. Crosby and assistants. (June 11). "Calls abundant on maple leaves at Ballston Lake. (June 23) Leaves badly infested at Watertown."

BAG-WORM (Thyridopteryx ephemeraeformis Haw.)

New York C. R. Crosby and assistants (May 23). "Eggs just hatching at Yonkers."

MAPLE BORER (Glycobius speciosus Say)

New York E. P. Felt (June 20). "Sugar-maple borer adults were abroad at Nassau on June 13, and at Saratoga on June 20. This is generally a decidedly injurious pest of sugar maples throughout the City."

ELM

ELM LEAF-BEETLE (Galerucella luteola Mill.)

New York E. P. Felt (June 16). "R. E. Horsey reports that elm leaf-beetle grubs, about one-quarter inch in length or less, were noted in Rochester today."

- North Carolina Franklin Sherman (June 1). "First report of damage for this season received today. Serious damage by this insect is usually confined to our upper Austral Life Zone at elevation of from 400 to 1,200 feet but not in the coastal plains or in the mountains."
- ELM BORER (Saperda tridentata Oliv.)
- Nebraska M. H. Swenk (May 15). "Reports of injury by elm borer indicate considerable activity on the part of this destructive shade-tree pest."
- ELM SCALE (Gossyparia sppmia Mod.)
- New York C. R. Crosby and assistants (June 12). "Trees badly infested in Johnson City. (June 17) Bad infestation in North Tonawanda. June 20) Infestation at Cayuga."
- E. P. Felt. "R. E. Horsey reports that this insect has been in Rochester for a number of years and is spreading slowly, young appeared June 12."
- WOOLY ELM APHIS (Ericosoma americana Riley)
- New York Charles Wille. "Trees infested at Liberty."
- COCKSCOMB ELM-GALL (Colopha ulmicola Fitch)
- New York M. D. Leonard (June 2). "Infested leaves received bearing numerous galls from Liberty."
- ELM LEAF-MINER (Kalioferusa ulmi Sund.)
- New York E. P. Felt (June 3) "R. E. Horsey reports that elm leaf-miner is fairly common at Highland Park, Rochester."
- ELM BUCCULATRIX (?)
- New York E. P. Felt (June 3) "R. E. Horsey reports that this species was found on elms in Highland Park, Rochester, some two years ago; so far nothing has been seen of it this year."
- BOXELDER.
- BOXELDER APHIS (Chaitophorus negundinis Thomas)
- Indiana J. J. Davis (June 15). "Boxelder aphid is a common species this spring."
- Nebraska M. H. Swenk (May 19). "On shade trees reports of injury were received beginning May 9."

OAK

PIT-MAKING OAK SCALE (Asterolecanium variolosum Ratz.)

New York E. P. Felt (June 1). "R. E. Horsey reports that golden oak scale showed no life at Rochester today.

OAK FIG GALL (Biorhiza forticornis Walsh).

New York M. C. Hammond (June 2). "Galls very numerous in Orange County."

OAK SEED GALL (Andricus seminator Harris)

New York M. D. Leonard (May 31). "Specimens received from Woodstock."

GYPSY MOTH AND BROWNTAIL MOTH.

(Porthetria dispar L. and Euproctis chrysorrhoea L.)

Massachusetts L. C. Midgley (June 16). "Infestation in Worcester County much heavier than last year; spraying is now being done."

ARBOR VITAE

ARBOR VITAE LEAF-MINER (Argyresthia thuella Pack.)

Connecticut W. E. Britton (June 23). "Have never noticed an outbreak of this insect before. The adults have emerged in swarms and eggs have been laid and are now hatching at New Haven."

MITES.

Arizona Don C. Mote (May 7). Eighty trees out of 100 are infested on the Capitol grounds at Phoenix."

PINE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

New York E. P. Felt (June 21). "R. E. Horsey reports that pine leaf scale is locally abundant in Highland Park, Rochester, on Pinus austriaca, P. peuce (P. montana mughus.) On the 21st of June young scales were hatching on P. aristata in a warm hollow."

SYCAMORE

FALL WEBSORM (Hyphantria cunea Drury)

North Carolina Franklin Sherman (May 30). "Nests becoming conspicuous at Raleigh on sycamore."

Indiana Indications at present are that the fall webworm will be a serious pest this coming summer.

Louisiana T. H. Jones (June 16). "There is an outbreak of the webworm in southern Louisiana. This is, as far as I know, the first serious outbreak since June, 1917. I do not have very definite information regarding the area covered by this infestation, but it seems to include the territory bordering on the river from Baton Rouge to a point about half way to New Orleans and extending also to the south along Bayou Plaquemine and Bayou Lafourche. The brood is not yet more than half grown and the damage not yet so noticeable as it will be in a few days. Feel certain that it is the second generation that is causing the damage at present.

West

Virginia

H. G. Starn (May 21). Reports but little decrease in number. Treatment with black-leaf 40 killed only one fourth of the aphids owing to the curled condition of the leaves."

BOXELDER PLANT-BUG (Leptocoris trivittatus Say)

Nebraska

M. H. Swank (June 9) "Reports of injury by the common boxelder plant bug beginning to be received on this date."

CAMPHOR

CAMPHOR SCALE (Pseudaonidia duplex Ckll.)

Louisiana

E. Baker (June 18) (Copied from Boston Transcript). "This pest now covers considerably more than a square mile in the City of New Orleans, and has been found on 97 distinct varieties of trees and shrubs. This estimate of the area covered by the scale was made by Professor Barber in April; other entomologists now believe that it has covered rather more than two square miles."

CATALPA

North

CATALPA SPHINX (Ceratomia catalpae Boisd.)

North

Carolina

Franklin Sherman (June 1). "One plant accompanied by a young larva from Central section of the State was received today."

Indiana

J. J. Davis (June 15). "The catalpa sphinx is very abundant as it is every year in southern Indiana."

HICKORY

HICKORY GALL APHIS (Phylloxera caryaecaulis Fitch)

New York

C. R. Crosby (June 11). "Galls abundant at Ithaca."

SPRING AND FALL CANKERWORMS

(Paleacrita vernata Pack. and Alsophila pometaria Har.)

New York

E. P. Felt (June 21). "R. E. Horsey reports that cankerworms, probably both the spring and fall species, were very bad in Seneca, and Maplewood Parks, in Rochester, stripping the hickories as well as feeding upon a number of other trees and shrubs. The pests were also reported on oaks in Genesee Valley Park."

GREENHOUSE AND ORNAMENTAL PLANTS

BOSTON TREEM

HEMISPHERICAL SCALE (Saissetia hemisphaerica Targ.)

New York. M. D. Leonard (Jan 1916). "Grove ferns in Buffalo badly infested and suffering considerably from the attack of this insect."

CANNA

CORNLEAFWORM (Chloridea obsoleta Fab.)

Florida. S. B. Walker (May 28). "Much more numerous than usual at Florida City. Fifty per cent of the crop damaged by actual count."

CARNATION

RED SPIDER (Tetranychus telarius L.)

New York H. C. Hockett (June 18) "Common in greenhouses in Nassau County."

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

New York C. R. Crosby (May 26). "Young plants at Dobbs Ferry infested and growth stunted."

Indiana H. F. Dietz (June 15). "Chrysanthemum midge is still an important pest in greenhouses."

LILAC

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

New York E. P. Felt (May 21). "Mr. R. E. Horsey reports that young scales appeared today. The scale was very bad this year as summer spraying had been neglected for the past three years and winter or spring treatment had little effect."

Indiana J. J. Davis (June 15). "Serious pest of shade trees and ornamentals, particularly in southern half of State. Scale on lilac began to hatch at LaFayette by May 23, at Peru on June 3, and the first one hatched at Goshen in the extreme northern end of the State June 3."

MOONSTED VINE

Plusiodonta compressicollis Guen.

New York W. T. N. Forbes (June 14). "Larvae injurious at Dryden."

WINTERBURN

CABBAGE BUTTERFLY (Pontia rapae L.)

New York M. D. Leonard (June 19). "A small patch at Ithaca badly defoliated by the larvae; two pupated about 10 days ago and a butterfly emerged today."

BEAN APHIS (*Aphis rumicis* L.)

Indiana J. J. Davis (June 15). "The nasturtium aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

PAIM

Pseudococcus nipae Maskell.

Florida Jeff Chaffin. (June 3). "All shrubs and ornamentals along the streets of Fort Myers are covered with this mealybug. The honey dew and sooty mold have ruined the appearance of all of the plants attacked, which include guava, sapodilla, and palms. The city is now taking steps to clean the pest."

PEONY

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

New York E. P. Felt (June 4). "Rose beetle was noted at Rochester on June 4; was not numerous enough to cause much injury."

MILLIPEDES

New York W. H. Wellhouse (May 29). "Girdling peony stems at the surface of the ground at Ithaca. The plants fall over and die."

PHLOX

RED SPIDER (Tetranychus telarius L.)

New York. C. R. Crosby (June 16). "Leaves badly infested at Deleran."

L. F. Strickland (June 18). "In normal numbers on phlox in Niagara County."

RHODODENDRON

RHODODENDRON TINCIS (Leptobyrsa rhododendri Horv.)

New York E. P. Felt. "R. E. Horsey reports that rhododendron lace bug was first noted in Highland Park, Rochester on this date. Some winged ones being observed on June 12."

H. C. Hockett (June 15). "Injuring plants in Nassau County."

ROSE

ROSE APHIS (Macrosiphum rosae L.)

New York G. E. Smith (May 28). "Abundant on roses in Orleans County."
E. P. Felt (May 21). "Very bad on rose bushes in Suffolk County."

Ohio H. Osborn. "Aphids of various species on rose, spiraea, and many other plants seem to be more than usually plentiful with an abundance of natural enemies."

Indiana J. J. Davis. "The rose aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

ROSE SAWFLY (Endelomyia aethionis Fab.)

Delaware C. O. Houghton (June 1). "Doing usual amount of damage at Newark."

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Delaware C. O. Houghton (June 4). "This species was first observed on May 23 at Newark. It appears to be less abundant than usual this year."

Missouri. Leonard Haseman (June 15). "I have never seen this slug so abundant or so generally injurious to rose foliage."

ROSE LEAFHOPPER (Empoa rosae L.)

New York E. P. Felt (May 27). "Mr. R. E. Horsey reports rose hoppers somewhat abundant on roses at Rochester."

J. B. Palmer (May 30). "Roses badly infested wherever observed in Ulster County."

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

New York C. R. Crosby (June 14). "Injury reported from Oakfield."

Delaware C. O. Houghton (June 1). "Very abundant and attacking a great variety of plants at Newark."

ROSE WEEVIL (Rhynchites bicolor Fab.)

New York R. Matheson (June 10). "First beetles observed on this date; numerous on rugosa roses."

OBLIQUE-BANDED LEAF-ROLLER (Archips rosaceana Harr.)

New York E. P. Felt "Mr. R. E. Horsey of Rochester reports that rose leaf-rollers were very numerous on perpetual roses."

SPIRAEA

SPIRAEA APHIS (Aphis spiraeicola Patch)

Indiana J. J. Davis (June 15). "The spiraea aphid is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

SUNFLOWER

SUNFLOWER BEETLE (Chrysobothris helianthi Mnn.)

Indiana J. J. Davis. "The sunflower beetle is one of the species most commonly brought to the attention of this office and which will be a serious pest this year from indications during the last half of May."

MISCELLANEOUS GREENHOUSE INSECTS

CYCLAMEN MITE (Tarsonemus pallidus Banks.)

Indiana H. F. Dietz (June 15). "Reports that this is an important greenhouse pest."

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum Westw.)

Indiana H. F. Dietz (June 15). reports that this is an important greenhouse pest. this year.

GREENHOUSE LEAF-TYER (Phlyctaenia ferrugalis Hübn.)

Indiana H. F. Dietz (June 15). "Greenhouse leaf-tyer is an important pest in greenhouses this year."

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

SCREW-WORM FLY (Chrysomya rapellaria Fab.)

Texas D. C. Parman (June 24). "The number of screw-worm cases has been considerably above normal and the weather conditions are very favorable for heavy losses during the remainder of the month. The loss in calf crop is at present a considerable item."

HORNFLY (Lyperosia irritans L.)

Texas D. C. Parman. "The hornfly was unusually abundant during the latter part of the month and the first of June, but the numbers have decreased rapidly during the last two weeks."

~~Tabanus~~ HORSE-FLY (Tabanus rubescens Bellardi)

Texas F. C. Bishopp (June 28). "During the latter part of June adults of this species were observed in numbers ranging from 2 to 20 per animal near the rivers in the vicinity of Uvalde. Mr. Parman reports this fly as being even more abundant during the latter part of May and early June. Anthrax has been reported on a few ranches in this district, and this fly is apparently rather intimately associated with the spread of this disease among live stock."

~~Tabanus~~ NEW YORK HORSE-FLY (Tabanus lasiodithus Macg.)
New York M. D. Leonard (June 8). "Quite common about Ithaca."

HUMAN FLEA (Pulex irritans L.)

Texas F. C. Bishopp (June 28). "The outbreak of fleas which has occurred throughout the Central states during the past two months seems to be subsiding. At least fewer reports of annoyance are coming in."

ROSE - CHAFER (Macrodactylus subspinosus Fab.)

J. B. Palmer (June 18), reports that 15 chickens were killed from eating these beetles in Ulster County.

Indiana J. J. Davis (June 15). "Reports of death of chicks from eating these beetles have been received."

WAX MOTH (Galleria mellonella L.)

New York Geo. A. Rea. (June 3). "Abundant in a badly neglected apairy. Moths and caterpillars abundant. Combs of a number of colonies completely destroyed where the bees had died out during the winter."

STINGING CATERPILLAR (Megalopyge opercularis S. & A.)

Texas F. C. Bishopp (June 28). "This stinging caterpillar which is of greater importance on account of the violent stings produced when man comes in contact with it than to its injury to foliage of shade trees, is present in considerable numbers in Dallas. At this time it is feeding largely upon hackberry trees. Last year there was a veritable scourge of this caterpillar in this and other north Texas cities."

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