THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States, issued on the first of each month from April to November, inclusive

Volume 3 July 1, 1923 Number 4

BUREAU OF ENTOMOLOGY

UNITED STATES

DEPARTMENT OF AGRICULTURE

AND

THE STATE ENTOMOLOGICAL

AGENCIES COOPERATING

INSECT PEST SURVEY BULLETIN

Vol. 3 July 1, 1923 No. 4

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1923.

The past month has been one of unusual insect abundance throughout the greater part of the country.

Cutworms of several species attacking practically all field and truck crops have been reported from the entire northern part of the country, reports of serious injury coming from Massachusetts, New York, Michigan, Iowa, South Dakota, and Idaho, and unusual wireworm injury to both cereals and truck has been reported from Ohio, Indiana, and Illinois in the East-Central States, and from Montana, Idaho, and Washington in the Northwest.

Serious grasshopper outbreaks have been very general over the upper Mississippi Valley, through the Rocky Mountain region, and along the Pacific Coast. Reports of outbreaks have been received from Wisconsin, North Dakota, Nebraska, Kansas, Texas, Wyoming, Utah, Oregon, and northern California. In the Klamath Lake region of California poisoned bran bait was being distributed at the rate of 10,000 pounds daily.

Heavy flights of June beetles occurred in parts of New York, Illinois, Wisconsin, and South Dakota; on Long Island, and in parts of southeastern South Dakota the heaviest flights that have been observed in years were recorded this year.

By the middle of the month the chinch bug was migrating from small grain to corn in Indiana. The situation relative to this insect, however, looks much more favorable than earlier in the season over the greater part of the chinch bug region. Egg laying was generally delayed by the backward season and heavy rains associated with the fungus disease and egg parasite in Illinois, Nebraska, Kansas, and South Dakota have materially reduced the infestations.

Hessian fly injury will be severe in Iowa and Nebraska owing to the heavy spring brood of flies and wheat is damaged from 2 to 25 per cent in parts of Illinois and Missouri by the jointworm. In some fields in Greene County, Missouri, 12 per cent of the straw is down owing to the feeding of the latter pest.

The boll weevil is emerging in fairly large numbers throughout the Cotton Belt; indications have already been reported of heavy broods in Georgia and Texas. A suggestion is made that dusting for the boll weevil tends to increase damage by cotton aphids by killing lady-beetles which feed upon this pest.

The pale striped flea-beetle is doing unusual damage to corn and truck crops, particularly to beans, in Indiana, Illinois, and Virginia.

The seed-corn maggot is again appearing in unusual numbers in parts of New York, Illinois, and Tennessee. In the last State the outbreak was decidedly more serious on land where fresh tankage fertilizer had been used. A similar association of this pest with organic fertilizers was noted in 1921, when an unusual outbreak of this pest occurred along the Atlantic Coast.

The rosy apple aphid was reported as unusually abundant in central New York, southern Pennsylvania, Ohio, and Illinois. The season seems to be one of very severe aphid injury, many species having been reported.

A new species of aphid on birch is occurring in such numbers in the cities of southern Connecticut as to be a nuisance.

Codling moth injury is reported as generally normal over the Eastern States, somewhat above normal in the East-Central States, and decidedly below normal in the Pacific Northwest.

The apple tent caterpillar has been unusually numerous in eastern Massachusetts, and moderately abundant in New York State, southern Pennsylvania, Delaware, Wisconsin, and Minnesota, especially where orchards have not been well cared for, and the forest tent caterpillar is reported as more numerous than usual in eastern Massachusetts, Connecticut, New York, and New Jersey. In Oregon the pest occurred in such numbers near Corvallis as to occasion newspaper write-ups of trains being delayed by hordes of these insects on the tracks.

The cankerworms attacking both orchards and forest trees are reported as abnormally abundant in New York, New Jersey, Wisconsin, Minnesota, and Iowa.

The imbricated snout-beetles are reported as defoliating apple trees in Illinois and Nebraska, and the oriental fruit-moth threatens considerable damage to late peaches in Virginia.

The rose chafer is occurring in very unusual numbers throughout the New England and Middle Atlantic States as far south as North Carolina and Tennessee, and west to Indiana.

The grape leafhoppers are appearing in alarming numbers in the grape-growing sections of New York, Pennsylvania, and Ohio.

Last year we reported the occurrence of an Anomala as very destructive to sugar cane in Hawaii. This is occurring in a nursery in Connecticut. What is supposed to be the larva of this species is reported from the same vicinity, where it is infesting lawns.

Brood XIV of the periodical cicada is reported as appearing in large numbers in eastern Massachusetts; central Long Island; Adams County, Pa.; Clarmont County, Ohio; and Tennessee, and scatteringly in Maryland, Virginia, and Indiana. Brood XXII of this insect appeared in large numbers in the six counties where it was reported in past years in Mississippi, and also in three additional counties in that State. In Louisiana it appeared in Livingston, East Baton Rouge, Ascension, East Feliciana, and West Feliciana Parishes.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA FOR JUNE, 1923.

A heavy set of fruit, with the possible exception of plums in certain sections, is reported from the orchard sections of Canada. Cereal crop prospects in the Prairies are excellent. The early part of June was cool and rather wet in

western Canada and warm and dry in the east. In northwestern Quebec plant and insect activities centering about the time of the opening of the balsam buds were relatively several days earlier than the past two years despite the cold spring. A heavy smoky atmosphere resulting from forest fires apparently raised the night temperatures and possibly accounts for the early conditions.

The strawberry weevil is the cause of many inquiries from Ontario and the Maritime Provinces, particular injuries being caused in strawberry plantations in southern Ontario and in the vicinity of Cumberland County, Nova Scotia.

The San Jose scale has been found on orchard trees at Spence's Bridge, B. C. This insect was believed to have been eradicated. The importance of this item lies in the fact that this is the only point in British Columbia where this insect is known to occur.

Owing to the great prevalence of the fungous disease, Entomophthora sphaerosperma, of the apple sucker, Psyllia mali, this insect is not nearly so abundant in Nova Scotia this season, although its distribution has been somewhat enlarged.

The spring cankerworm is occurring in outbreak form on apple and elm trees in many sections of southern Ontario.

Regionally throughout western Ontario the flight of June beetles has thus far been light.

In summarizing the late autumn and winter mortality of the European corn borer at various points throughout the entire infested area in Ontario, but 6.4 per cent of the larvae were found to have died. The reduction of the larvae in the field by birds this past winter in ordinary crop refuse was of no practical importance in control. This indicates clearly that these natural control factors can not be depended upon to assist materially in the control of the pest. The excellent results following early fall and careful spring plowing in reducing the number of larvae have been strikingly illustrated this spring.

Hessian fly injury is generally light throughout western Ontario.

Grasshoppers are reported in severe outbreak form in southern Saskatchewan.

Wireworms are occurring in local outbreaks in Saskatchewan and Manitoba and much damage to wheat and corn has been caused.

The lesser clover-leaf weevil appears to be more abundant than the clover-leaf weevil this year in southern Ontario and is decidedly more injurious.

The elm bark-louse has again made its appearance in considerable numbers in the vicinity of Ottawa. This insect is one of the worst enemies of the elm in Canada.

CEREAL AND FORAGE-CROP INSECTS

GENERAL FEEDERS

CUTWORMS (Noctuidae)

Massachusetts — A. I. Bourne (June 23): Cutworms are still doing some damage on the Cape, where they are much more destructive on truck crops than usual this season.

Michigan — R.H.Pettit (May 28): I received today some specimens of cutworms from Benzie County, in the northwestern part of the Lower Peninsula, with statement that fifty-two were taken from around one sweet-clover root which was plowed up in making ready for a cornfield. Last year the same kind of cutworm seemed to be attacking the roots of sweet clover.

Wisconsin — S.B.Fracker (June 15): Moderate damage reported to corn, tomatoes, and other crops in Rock, Dane, Grant, Vernon, Pepin, Monroe, Wood, Portage, and Lincoln Counties. Reported absent in Burnett County up to May 15 at least.

South Dakota — A.L. Ford and H.C.Severin (June 8): Cutworms are seriously damaging young corn in many places in the southeastern part of the State. Many farmers have been forced to replant. In no case has there been injury to corn on fall-plowed land.

Nebraska — M.H.Swenk (May 15-June 15): Cutworms, despite the cool, wet spring over most of the State, have not been normally abundant or destructive. During the third week in May, however, heavy flights of the moths of the western army cutworm (Euxoa auxiliaris), resulting from an abundance of its cutworms the preceding month, was taking place in Arthur County.

Idaho — Don B. Whelan (May 24): Cutworms ate all green growth on 5 acres of alfalfa at Blackfoot. Control was obtained by the use of poisoned-bran mash.

WIREWORMS (Elateridae)

Ohio — F. W. Poos (June 7): We have noticed Limonius sp. occasionally on our experimental plot at Sandusky this year, but to date no damage to the corn is apparent.

Indiana — J. J. Davis (June 19): Report of injury to corn at Reynolds on June 15, also report on June 16 at Columbus.

Illinois — W. P. Flint (June 19): Unknown species of wireworms have been abundant and destructive. Several counties in the central part

of the State report 5 to 10 per cent of the cornfields damaged. Individual fields where actual counts were taken show 5 to 50 per cent of the corn killed.

Montana — Stewart Lockwood (June 1): A farmer at Roberts sent in some larvae he found destroying his field of wheat. He said that a large part of the field was destroyed.

Idaho — Claude Wakeland (May 26): Adults are numerous at this time in the southwestern part of the State and females are ovipositing freely. This pest is becoming increasingly abundant from year to year and gradually spreading to irrigated land that has remained more or less free for years. It is impossible to raise corn or potatoes in certain restricted localities. Wireworms are a pest of major importance to growers of potatoes, lettuce, and corn.

Washington — M. C. Lane (June 4): Under separate cover I am sending by this mail a package containing five larvae of the genus Pheletes collected by me at Toppenish, Wash., June 1. These larvae are from the same nursery as those reported by Mr. Newcomer about May 17 and are without doubt the wireworm that is doing the damage. My own observations and collections lead me to believe that this is the wireworm that is doing all the damage to crops under irrigation in the Yakima Valley and several other irrigated sections in the State besides. The damage in the nursery was mostly in blocks of seedlings on land that had been in potatoes for several years previous. I will also include a mounted specimen sent me by Mr. Newcomer (Pheletes occidentalis Cand.) which he states was picked up dead in the nursery where the larvae were found. It may or may not be the adult responsible, but I wish to have this adult determined and returned to me for future comparison. In outdoor cages here I have several larvae of the same lot as those being sent, and hope to procure adults before the summer is over. If I succeed I will send the adults in for determination also.

GRASSHOPPERS (Acrididae et al.)

Wisconsin — S. B. Fracker (June 15): Grasshoppers, mostly Melanoplus atlanis are slightly worse than last year at this date in Oneida, Florence, and Forest Counties. Not as bad in Price County. In pastures only so far. Reported present in Vernon County by County Agent.

North Dakota — R. L. Webster (June 12): Some rye fields in McHenry and Bottineau Counties are reported as having been plowed under because of damage by young hoppers. They are increasing in numbers.

South Dakota — A. L. Ford and H. C. Severin (June 8): According to the numbers of eggs hatching during the last of May, trouble from Melanoplus bivittatus Say, is expected in the alfalfa seed-growing section, Fall River, Custer, Pennington, Meade, Butte, and possibly some in

Lawrence Counties. To date the only known pending outbreak of Melanoplus differentialis is in Bon Homme County at the mouth of Dry Schoteau Creek. In this locality the eggs are numerous.

Nebraska M.H.Swenk (May 15-June 15): Grasshoppers, chiefly Melanoplus bivittatus, were found to be hatching out abundantly in the irrigated district of the North Platte Valley during the first week in June, promising continued injuries in some localities. About half of them had emerged from the eggs by June 8.

Kansas J. W. McColloch (June 21): Grasshoppers are appearing in large numbers in all fields in Ellis County.

Texas R. R. Reppert (June 4): From Fort Worth to San Antonio, north and west, the country is suffering the most serious outbreak of grasshoppers since 1901 and great difficulty is experienced in obtaining poison. Species differentialis prèdominates.

M. C. Tanquary (June 8): Very serious grasshopper outbreaks are occurring in about a dozen western and mid-western Texas points. (June 15): Numerous reports from about a dozen counties in central and western Texas indicate more serious grasshopper outbreaks than have occurred in this State for several years. Poisoned-bran mash is being used with success.

Wyoming Stewart Lockwood (June 1): Melanoplus bivittatus are now about two-thirds hatched and are just starting to work on the edges of crops in Park County. The infestation promises to be very heavy in corn and alfalfa.

Utah H.J.Pack (May 26): The black cricket, Anabrus simplex, threatens much greater damage this year than was done last year. These crickets occur in menacing numbers in the southern part of the State, where they are already in fields of grain and alfalfa. There are a few in Cache County and considerable numbers are reported in Uinta County.

Idaho Don B. Whelan (May 24): Grasshoppers are more abundant in Bingham County than last year or during preceding years. A very extensive and severe outbreak in 1922 required a well-organized and long-conducted poisoning campaign. About 10 per cent of the eggs are now hatched. Blister-beetle larvae, Epicauta maculata, are numerous. (May 25): Anabrus simplex damaged one end of a wheat field at Fairfield and then moved on to a pasture. They are much more abundant than last year.

Oregon C. M. Packard (June 9): In Klamath County hoppers are still small, but very abundant in practically all cultivated valleys. Systematic poisoning is being carried on under direction of the

County Agent, with excellent results in most localities. If the outbreak had not been vigorously fought extensive and serious damage would have taken place.

California C. M. Packard (June 7): At the Klamath Irrigation Project hoppers are still small and in isolated bands, but they are spreading. Several species are present but not determinable in the young stages now present. Extensive poisoning is now in progress with varying success from excellent to poor, on the whole good. An area of 50,000 acres is covered by a spotted infestation.

California Weekly News Letter, Vol. 5, No. 12 (June 16): Advices received by the California Department of Agriculture from Horticultural Commissioner for Modoc County indicate heavy infestations of grasshoppers both in Modoc and Siskiyou.

In the Tule Lake section of Modoc and Siskiyou grasshoppers are menaching twenty thousand acres of grain. Several thousand acres of "reseeded land" in this section are literally covered with small hoppers. The U. S. Reclamation Service has given $5,000 to combat the grasshoppers and every cropper is devoting practically all time to scattering poison.

During favorable weather for poisoning as much as 10,000 pounds of poison bran mash is scattered daily. The Horticultural Commissioner for Modoc County is putting on crews to assist the croppers. Ingredients for mixing the poison are being bought in carload lots and everything possible is being done to relieve the situation.

APHIDS (Aphididae)

Illinois W. P. Flint (June 19): The English grain aphid, Macrosiphum granarium, is generally abundant in wheat throughout the State but, not in numbers sufficient to cause injury to the grain.

Indiana J. J. Davis (June 15): The grain aphid, Macrosiphum granarium, has been abundant the past two weeks, apparently with no appreciable injury, however.

Texas O. G. Babcock (May 9): For the first time in three years the weather has been very favorable for the development of aphids in general in West Texas within a 100-mile radius of Sonora. The spring was late and cool, with an abundance of moisture. Weeds and shrubs of all kinds have made wonderful growths, exceeding normal growth by 100 per cent in many cases. Aphids upon a rare but wild Gilia, on penstemons, domestic flowers, plum trees, and roses and other plants are or were common. No predacious nor parasitic enemies to mention have been present until now, when hot and dry weather is setting in. The aphid enemies are now becoming very numerous. Grain aphids are also present upon volunteer barley.

WHITE GRUBS (Phyllophaga spp.)

New York L. J. W. Jones (June 15): May beetle larvae about 1/4 inch long,

2 to 5 per square foot, where observed. Observation was not general, and these might have hatched from an egg cluster. Believed to be increasing (20 per cent more than last month) at Bainbridge, in Chenango County.

Roy Latham (June 20): Swarms of June beetles have been the heaviest ever observed at Orient, in Suffolk County.

Wisconsin S. B. Fracker (June 15): Adults are riddling oak and poplar leaves from Madison to Platteville, in the southwestern part of the State. In Vilas County both larvae and adults are present.

Illinois C. C. Compton (April 30): Adults of Phyllophaga fusca Froe. are beginning to appear at Aurora in moderate numbers.

W. P. Flint (June 19): There was a heavy flight of June beetle adults during the latter part of May and the first of June. Many oaks in scattered stands of trees were nearly defoliated.

South Dakota A. L. Ford and H. C. Severin (June 8): Adults are more numerous in the southeastern part of the State than for years, according to obsergations and reports. This indicates that this section will suffer during the growing seasn of 1924.

Idaho Don B. Whelan (May 24): Adults are reported numerous but no injury is reported.

WHEAT

CHINCH BUG (Blissus leucopterus Say)

Ohio Herbert Osborn (June 2): Occasional bugs have been taken in sweeping in meadow land at Columbus. No serious infestations have been observed so far.

Indiana J. J. Davis (June 15): On June 14 the first report of bugs migrating from grain to corn was received from Jasonville, in Greene County. Bugs are abundant in small grain fields. Severe outbreak is anticipated.

Illinois W.P. Flint (June 19): Hatching of the chinch bug eggs was greatly delayed by the cool wet weather. The first young were found in the field June 7. Rains have had some effect in lessening the number of eggs laid, but have not made any material decrease in the chinch bug numbers. There will apparently be a very heavy infestation covering more than three-fourths of the State. The degree of infestation varies locally, being most severe throughout central and south-central sections.

Iowa Fred D. Butcher (June 4): On May 30 adults were present in wheat fields in Lee County, 1 to 12 per stool, and mating. No eggs were found.

South Dakota — A. L. Ford and H. C. Severin (June 8): Charles Mix, Bon Homme, Douglas, and Hutchinson Counties wintered many bugs successfully. Chances are good for trouble in these counties. Recent heavy rains in this section undoubtedly have relieved the situation to some extent.

Nebraska — M. H. Swenk (June 15): The chinch bug began appearing about May 20 in abundance in the wheat fields of southern Pawnee, Gage, and Jefferson Counties and in unimportant numbers in the wheat fields north of these counties to the Platte River. During the week from May 17 to May 24 there were sufficiently heavy rains in this region to give something of a setback to the bugs, but they are still very abundant in some fields. Even heavier rains occurred in the region farther west that was found to be more or less infested last fall, from Jefferson to Furnas Counties, and no reports of great abundance of chinch bugs in that area have been received this spring.

Kansas — J. W. McColloch (June 16): Owing to backward weather conditions, hatching has just begun in the northern half of the State. Chinch bugs are more abundant than in an average year and less abundant than last month, because of abnormal climatic conditions. Fungus, egg parasites, and ladybeetles are present. As many as 15 or 20 diseased bugs to the square foot occur in small grain, and from 10 to 15 per cent of the eggs are parasitized.

Texas — M. C. Tanquary (June 15): Chinch bugs have been reported as occurring in destructive numbers in Denton and Houston Counties. They have been noted as being present in small patches of sweet corn in Brazos County.

HESSIAN FLY (Phytophaga destructor Say)

Iowa — Fred D. Butcher (May 28): September 20 seeding is heavily infested, from 80 to 90 per cent, late seeding, after October 5, from 30 to 50 per cent, from spring flight within a radius of 1 to 2 miles in Mills County. (June 9): This pest is well distributed over Monroe County, and the spring injury will no doubt be severe. Straws are falling badly now.

Nebraska — M. H. Swenk (May 15- June 15): In spite of the dry summer and fall of 1922, the fall brood appeared in strength in the early-seeded winter wheat in some parts of eastern Nebraska, and this strength was greatly augmented by the heavy spring brood of 1923, so that the pest is now so abundant as to cause some serious losses in the present crop, and form a menace for the new crop to be seeded this fall. Weather conditions this spring have been unusually favorable for the Hessian fly. The insect is well distributed over much of southeastern Nebraska, being locally

injurious here and there as far west as Furnas County, but the most serious injury is practically confined to the block of four counties bordering the Missouri and south of the Platte, Cass, Otoe, Nemaha, and Richardson, with the adjacent counties of Johnson and Pawnee. In Cass County the infested fields are mostly the early-seeded ones, and these show frequently from .75 per cent to practically 100 per cent of the stems affected, causing an estimated average local damage to the crop of from 5 per cent to as high as 20 per cent in the more eastern townships. Otoe County is also seriously infested, especially the eastern portion, only slightly less so than Cass County, and the same may also be said of Nemaha County. In Richardson, Pawnee, and Johnson Counties the injury is less intense, being the worst in Richardson County. Northern Butler County has considerable infestation also. The fly larvae were beginning to change into "flaxseeds" on May 21, which marked the beginning of the end of active injury. A considerable number of the very badly injured fields were plowed up and planted to corn during the last week in May and the first week in June.

WHEAT JOINTWORM (Isosoma tritici Fitch)

Illinois W. P. Flint (June 19): This worm is present in nearly all fields, and in many fields where examinations have been made more than 25 per cent of the straws are infested.

Missouri O. C. McBride (June 22): In Greene County 12½ per cent of the wheat in several fields is injured with heads blasted and straw lodging. Grubs are nearly full-grown. In Mississippi County there also about 2 per cent injury and 5 per cent in Phelps in many fields.

A SAWFLY (Dolerus sp.)

Indiana W. A. Ostrander (June 14): Sawfly larvae are damaging wheat in the northern half of Elkhart County, near the Michigan State line. Larvae are eating foliage and green wheat heads, doing considerable damage.

FALSE WIREWORMS (Eleodes hispilabbis, E. latcheri and E. carbonaria)

Idaho Claude Wakeland (May 20): These are pests of major importance to the wheat raisers on the dry-land farms of eastern Idaho. Usual general injury caused in many fields with an occasional field that is severely injured and almost entirely or completely killed out.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana T. H. Jones: Complaints of injury by larvae of the first generation have been received from West Feliciana, Avoyelles, St. Helena, East Baton Rouge, and East Feliciana Parishes; larvae, pupae, and adult from St. Helena Parish. It is interesting to note that the complaints of injury come from a section of the State where the sugar-cane moth stalk-borer has caused severe injury to corn during the past few years. Moths from material sent in began issuing in our insectary on June 4.

Arizona V. L. Wildermuth (June 6): Report of Diatraea, probably D. lineolata (although it may be zeacolella), received from Tucson, damaging corn 33-1/3 per cent.

STALK BORER (Papaipema nitela Guen.)

Connecticut M. P. Zappe (June 21): Very young corn, less than 3 inches high, is badly infested at Hamden. This borer seems to be more abundant than in an average year.

BILLBUGS(Sphenophorus spp.)

Indiana J. J. Davis (June 15): On June 7 Sphenophorus parvulus was reported damaging corn in low spots of field 5 miles northeast of Mulberry. This field was in timothy last year. (June 16): A beetle, probably Sphenophorus sphaeus, is about 1/2 inch long and of a grayish color with a faint stripe. It has a bill about 1/4 inch long with which it punctures the young plant. It has destroyed about 500 acres of corn at DeMotte in the Kanbaba marsh land, and the proppects are that it will get that much more.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

New York C. R. Crosby (June 8): Corn infested with Phorbia fusiceps was received from Cayuga County. In many cases the farmers have had to replant the field.

Illinois Chas. C. Compton (May 26): The seed-corn maggot has been more troublesome this spring than usual in the northern part of the State, necessitating replanting in several cases.

PALE-STRIPED FLEA-BEETLE (Systena taeniata Melsh.)

Indiana J. J. Davis (June 15): On June 14 the pale-striped flea-beetle was reported as practically destroying 20 acres of corn and moving at the present time to an adjoining field near West Point, 10 miles southwest of LaFayette. On June 15 the same species was destroying 10 acres of corn at Goodland.

Illinois W. P. Flint (June 19): Pale-striped flea-beetle larvae, var. blanda, have been very abundant throughout central and northern Illinois and have caused considerable damage to corn during the first two weeks after planting. A number of cases have been reported where the adults were all of this species.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Idaho Don B. Whelan (May 24): Larvae are quite noticeably present in terminal buds of alfalfa at Blackfoot and Aberdeen. Abundance is greater than in 1922.

Claude Wakeland (May 25): Activity of adults is extending over a long period of time. The first larvae were observed in the field in southwestern Idaho May 2, the first pupae May 22. Larvae are abundant in fields, also eggs, and females yet contain large numbers of eggs to be deposited. Communities severely affected in 1922 are in general less infested, but severe injury is occurring or will occur in communities where not noticed last year. Bathyplectes curculionis occurs generally but in small numbers around Caldwell and Parma.

ALFALFA CATERPILLAR (Eurymus eurytheme Boisd.)

Idaho Don B. Whelan (June 8): Damage at Wendall is slight, about 1 per cent. Quite a percentage of terminal leaves are eaten. Injury resembles that of alfalfa weevil when not abundant.

FALSE CHINCH BUG (Nysius ericaea Schill.)

Minnesota A. G. Ruggles (June 7): The false chinch bug was discovered doing considerable damage in alfalfa fields at Milaca.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Idaho Don B. Whelan and Claude Wakeland (May 20): The steady and consistent increase of this insect while slow would suggest that it may become a pest of major importance at some future time. It has become more abundant each year during the last three years. Several reports of injury to alfalfa and clover have been received this season. Attention is called to it mostly by farmers taking injury of it to be due to the alfalfa weevil. Locality, in Boise-Payette Valley.

LESSER CLOVER-LEAF WEEVIL (Phytonomus nigrirostris Fab.)

Ohio T. H. Parks (May 31): These larvae are now common in the embryo heads and buds of red clover at Columbus, also beneath the leaf stipules. Some are already nearly full-grown. Prospects are good for interference of normal blossoming due to the presence of the larvae. This has been the worst insect pest of red clover for several years in western and central counties. (June 23): The pest is present at Columbus in the usual numbers, but good growing weather enabled the clover to outgrow its damage. After watching this pest for four years, we notice parasitism increasing and beginning to have its effect upon the host.

RYE

SORGHUM WEBWORM (Celama sorghiella Riley)

Indiana J. J. Davis (June 16): We have received specimens of what certainly must be Celama sorghiella, attacking the developing grains in the heads of Rosen rye at Newport. This is the first record we have

ever obtained on this insect attacking rye; in fact I do not recall its ever having been found injuring this crop before. Our correspondent has advised us that it attacks nothing except Rosen rye, which is a new variety for that section.

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

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

Massachusetts A. I. Bourne (June 23): Aphids were about normally abundant the last of May and the first of June in unsprayed orchards, but were held in absolute control in the blocks where careful spraying was done. Reports indicate that aphids occurrence is much less than is normally the case and they are being taken care of very well by the Coccinellids.

Connecticut W. H. Darrow (June): Ladybug larvae and another small downy covered worm are apparently exterminating the aphids in certain orchards.

C. D. Clark (June 15): This insect is reported from Wilton and Greenwich, abundance as compared with an average year being less. In Wilton, larvae of ladybeetles are abundant.

New York C. R. Crosby and assistants: Infestation was rather severe early in the month, but heavy rains have reduced the outbreak to a negligible factor for this season.

Pennsylvania S. W. Frost (June 8): The green apple aphid has not been found serious in Adams County this season. It has become more numerous during the past few weeks, however.

Ohio E. W. Mendenhall (June 12): Abundance of green leaf aphids or plant-lice is far greater than last year on apple trees in this section and they seem to be hard to control. There are a number of commercial apple orchards in this locality.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut W. E. Britton and Philip Garman (June 12): This insect is not numerous enough to be serious. I believe it is generally much less abundant in this State than last year. It has been reported from Greenwich, Deep River, and Haddam and is more abundant than in an average year in this locality.

New York C. R. Crosby and assistants: The rosy apple aphid is over the apple-growing section, doing serious damage in Oswego and parts of Orleans Counties.

Pennsylvania S. W. Frost (June 8): The rosy apple aphids were very abundant in Adams and Franklin Counties this summer. The winged forms are appearing in large numbers and the aphids are migrating.

Ohio E. W. Mendenhall (June 16): Rosy apple aphids are very bad in the commercial and farm orchards in Delaware County. "Black-leaf 40" is being used, but they seem hard to control. The infestation seems worse than usual this year.

Indiana H. F. Dietz (June 22): Unusually abundant this year.

Illinois W. P. Flint (June 19): The rosy apple aphid is very abundant throughout the central and southern part of Illinois. Infestation is decreasing at the present time owing to attack of syrphus flies, ladybugs, and other insect enemies.

CODLING MOTH (Carpocapsa pomonella L.)

New York C. R. Crosby and assistants: The first eggs of the codling moth began to appear in orchards on June 5, and 6, in Orleans County. The weather has not been favorable for codling moth development. Very few moths have emerged to date. Observations at Sodus, Wayne County, indicate that codling moths are all in the larva stage. In the southern part of the county pupae and adults were found in abundance. The adults were just emerging from the pupa cases. No eggs were found.

Virginia L. A. Stearns (June 21): The first cocooning of first-brood larvae occurred June 8, and the first pupation, June 11. Full-grown worms have since been found leaving the fruit in rapidly increasing numbers.

Illinois W. P. Flint (May 18): The first adults of the codling moth emerged at Carbondale on May 7. Judging from the pupation records at other points in the State, eggs of the first brood will be hatching from May 20 in southern Illinois to about June 10, in the northern part of the State. (June 19): This moth is present in more than average numbers. Adults are still continuing to emerge from overwintering larvae.

Idaho Claude Wakeland (May 28): First emergence was observed at Parma May 18, the first eggs in the laboratory May 26.

Washington E. J. Newcomer (June 18): Owing to the cool rainy weather the codling moth is not nearly as numerous as last season. This, together with the unusual efforts being made by the growers to fight it, should result in a very clean crop of fruit.

FRUIT-TREE LEAF-ROLLER (Cacoecia argyrospila Walker)

New York — C. R. Crosby and assistants: In Orleans County, leaf-rollers have begun to pupate. They are very plentiful throughout the county, and are doing considerable damage in some orchards. In Monroe County this insect is common and is doing considerable injury. Leaf-rollers are about all hatched, and are rather abundant throughout the entire county. They are abundant on apples in many orchards. Well-sprayed orchards do not have as many as those not so well taken care of. It begins to appear that more aggressive measures may be necessary next year. This insect is commonly found in Wyoming County in neglected and unsprayed orchards. In Wayne County it is prevalent over the whole county, and abundant where no pre-blossom spray was applied. In most orchards in Ontario County this insect can be found, but it is not bad where the spraying has been good. In Chautauqua County, it is frequently found but is not abundant enough to be destructive. It is very general in distribution and causing considerable damage in Oswego County. It is found generally in Genesee County, damage being from 1 to 10 per cent. In Dutchess County, it is rather pregalent, especially in the orchards which received no pre-blossom spray; 2 per cent injury, generally distributed.

Missouri — L. Haseman (June 5): This insect is not abundant in any one section, though it is scattered over the State and more or less serious where found.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Massachusetts — A. I. Bourne (June 23): A few specimens of this pest were sent in on June 14, from the town of Sheffield. At the time of arrival one of the specimens had pupated.

Connecticut — J. A. Manter (June 22): The first brood has matured in Mansfield, and is more abundant than in an average year.

F. A. Bartlett (June 23): Reported from Fairfield. Abundance apparently more than a year ago, and less than in 1922.

New York — C. R. Crosby and assistants: Larvae are now working in small numbers on some of the trees. It is expected that the calyx application will clean up this pest in Dutchess County. In several parts of Rockland County this pest was observed in small numbers the past week.

M. D. Leonard (April 15): Roy Latham reports that moths were out in large numbers on this date. A few were seen the last few days of March at Orient, Suffolk County. They were found to winter over in buildings and under loose bark. (June 22): The Albany County agent, reports considerable skeletonizing at present at Ravena.

E. P. Felt (June 22): There is severe skeletonizing of leaves at present in several orchards.

BUD MOTH (Tmetocera ocellana Schif.)

New York C. R. Crosby and assistants: Fairly abundant and serious throughout the apple growing sections especially on young and poorly cared for orchards.

Minnesota A. G. Ruggles (June 7): The bud worm was found doing considerable damage at Orchard Gardens. This is the first time this insect has been discovered in numbers in the State. A closely related form of Stenoma algidella was also found along with this species.

GREEN FRUITWORM (Xylina antennata Walker)

New York C. R. Crosby and assistants: In Oswego County this insect is reported as doing considerable damage in two orchards with 2 per cent injury. In Dutchess County it is generally distributed. It is fairly serious in some neglected orchards in Genesee County, with 1 to 5 per cent injury. Two or three serious infestations of the green fruit worm occurred in Columbia County, one of these being in fact the worst infestation ever seen. The insect is doing an unusual amount of damage here this year in general. In Ontario County it is rather numerous, especially in orchards not well sprayed. Not plentiful in Orleans County, but a few are to be found in some orchards, In Ulster County this insect is general but not common or serious. In Monroe County it is present but not abundant, and in Chautauqua County it is found only occasionally in various parts of the county.

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts A.I.Bourne (June 23): As predicted earlier in the season, reports indicate that tent caterpillars were abnormally abundant and when neglected did considerable damage in Franklin, Worcester, and Barnstable Counties, and in fact throughout the State. In many places it is recorded as the only apple pest of importance this season.

Connecticut F. A. Bartlett (June 23): This insect is reported from Fairfield, as being more abundant than last year.

I. W. Davis : This pest is reported from Windham County, increased in abundance as compared with average year.

W. E. Britton (June 23): The tent caterpillar is particularly abundant in Litchfield County, but abundant all over the State.

New York C. R. Crosby and assistants: Tent caterpillars are quite numerous in all parts of Oswego County. They are found in Ontario County in most orchards that have not been sprayed, not serious in Orleans County; also observed on roadside trees, in Genesee County.

J. T. M. Forbes (June 2): Tent caterpillars are coming into the last stage. This is to be expected early in June, but is in ddrect contrast with the belated development of most other insects this season.

Leland J. W. Jones (June 10): Owing to unfavorable and cold weather last month, the report was not exact; this pest is increasing over former years at Bainbridge. Little is to be done to control it.

Pennsylvania S. W. Frost (June 8): The apple tent caterpillar is abundant on neglected apple, plum, and cherry trees in Adams County.

Delaware C. O. Houghton (May 17): Caterpillars are now migrating to find suitable places for spinning up. Serious injury has been done in many cases, thees being wholly defoliated.

Wisconsin S. B. Fracker (June 15): This insect is reported in Columbia, Grant, and Marathon Counties; and has been personally observed in Dane, Rock, and Walworth Counties.

Minnesota A. G. Ruggles (June 7): The tent caterpillar was very abundant in Orchard Gardens. Ordinarily we see very little of this insect in Minnesota. In this part of the State the orchards have not been well taken care of and the insect seems to be on the increase.

SPRING CANKERWORM (Paleacrita vernata Peck)

New York C. R. Crosby and assistants: This insect is quite generally prevalent over the western New York apple growing section. It was so serious this year in Genesee County that a spray ring has been formed to fight this pest. It is estimated that the trees in the infested area are 75 per cent defoliated.

Wisconsin S. B. Fracker (June 15): The spring cankerworm is less injurious than in 1921 and 1922 in southeastern counties, but worse from Madison to Spring Green.

C. L. Fluke (June 22): The spring cankerworms have appeared in the southern part of Wisconsin in great numbers. At this date the damage is nearly over.

Minnesota A. G. Ruggles (June 7): The spring cankerworms seem to be as bad this year as ever in many sections of the State.

Iowa — Fred D. Butcher (June 1): Cankerworms are stripping elms and unsprayed apple orchards in different parts of the county.

FALL CANKERWORM (Alsophila pometaria Harris)

New York — C. R. Crosby and assistants: In Orleans County, the fall cankerworms are working in orchards in the southern part of the county, while in Wayne County, they are unusually abundant in three neglected orchards.

Wisconsin — C. L. Fluke (June 22): The fall cankerworms have appeared in the southern part of Wisconsin in great numbers. At this date the damage is nearly over.

Minnesota — A. G. Ruggles (June 7): The fall cankerworms seem to be as bad this year as ever in many sections of the State.

APPLE RED-BUG (Heterocordylus malinus Reut.)

Massachusetts — A. I. Bourne (June 23): The apple red-bug is reported as being fairly abundant in Pittsfield, in Berkshire County, in spite of rather careful spraying. In the College orchard the red-bug is found to be very generally distributed and troublesome. It should be nearly through its work at this time, however, for the season.

Connecticut — W. H. Darrow (June): This insect is reported as attacking the apple throughout the entire State of Connecticut.

New York — C. R. Crosby and assistants: The apple red-bug has been observed in moderate numbers in numerous orchards in Dutchess County, but only a few have been found in Ontario County, and it is very scarce in Ulster County.

FALSE APPLE RED-BUG (Lygidea mendax Reut.)

Connecticut — J. A. Manter (June 22): This insect is reported as attacking the apple in Mansfield. It is less abundant than in an average year for the last few years.

New York — C. R. Crosby and assistants: In Ontario County the false apple red-bug has been seen in nearly every section. Although a few orchards have been found where they were plentiful, they have been hatching rapidly during the past week. In Wyoming County they were first found on May 31, one orchard being seriously infested. In Monroe County they were not abundant but were present. In Orleans County, nymphs have reached the third and fourth instars, and are abundant in a few orchards, while in Ulster County, the red-bugs are in the third stage, and

abundant in but three locations, none having been seen now for 2 weeks. In Genesee County to the present time, these insects have been found in the third instar, and several orchards required control measures. In Nassau County they were found in one orchard this past week, while in Onondaga County they began hatching in but one orchard where they are very numerous. In Wayne County, the nymphs are now in the fourth stage, while at Dutchess County they were observed in moderate numbers in numerous orchards.

APPLE LEAFHOPPER (Empoasca mali LeB. et al.)

Massachusetts A. I. Bourne (June 23): The early hoppers of the apple were very bad indeed in many orchards but were readily handled by the spraying and dusting campaigns.

New York C. R. Crosby and assistants: In Ontario County, apple leafhoppers are abundant all over, while in Orleans County, they are abundant throughout the county and are now changing to adults. In Ulster County they were found in but 2 orchards in plentiful numbers. They are abundant in Monroe County, but not yet severe. The majority of these insects have reached the adult stage in Genesee County, and are found generally in younger orchards. In Wyoming County they are present particularly in the younger orchards but not serious, causing some injury in a few young plantings. In Wayne County they are very abundant over the county, especially in the northern half, and have become quite serious in some orchards. Most damage has been done on younger trees. In a few individual cases a special spray was recommended. They are hatching in large numbers.

Wisconsin Van W. Cass (June 10): This insect is reported as "bad" in Madison.

Connecticut Philip Garman (June 21): The rose leafhopper has been reported as attacking the apple at Hamden, and more abundant than in an average year.

Pennsylvania S. W. Frost (June 8): The rose leafhopper is exceedingly abundant on apple in some orchards in Adams County. The characteristic white stippling on the leaves is already very pronounced. A small percentage have transformed, but the greater proportion are still nymphs.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts A. I. Bourne (June 23): The San Jose scale seems to be increasing in abundance.

New York C. R. Crosby and assistants: The young of the San Jose scale appeared on June 11, and were found in plentiful numbers in but

a few orchards in Orleans County, while in Genesee County they were found generally serious in Bergen. They are slightly more common than last year in Monroe County.

North Carolina — R. W. Leiby: This insect has been increasingly injurious in the commercial sandhill section on peach trees during the past two years. Trees that received two applications of lime-sulphur at standard strength during the same winter continue to show heavy infestation. An unusual number of parasitic emergence holes are now prevalent.

Georgia — Oliver I. Snapp (June 20): The general scale infestation in the Georgia Peach Belt is still moderately heavy. Liquid lime-sulphur has apparently given only fairly good results in controlling scales. The control is excellent in experimental orchards where lubricating-oil emulsions were used.

Wisconsin — S. B. Fracker (June 1): Extensive spraying campaigns at Whitewater and Rochester seem to have nearly eliminated the San Jose scale. Infestation is slight at the remaining three or four infestation centers. Spread in a park at LaCrosse caused a new thorough treatment.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Massachusetts — A. I. Bourne (June 23): The oyster-shell scale young made their appearance about the 30th of May to the first of June. We find there was considerable evidence of winterkilling, so that the pest was much reduced in numbers, particularly in this immediate region (Amherst) and is present in about normal numbers.

New York — C. R. Crosby and assistants: This scale was quite prevalent throughout Ontario County. In Genesee County no heavy infestation was found, while in Orleans County it was not bad except in unsprayed orchards.

Indiana — J. J. Davis (June 15): The banded oyster-shell scale began hatching at La Fayette on June 3, and by June 10 they had all hatched; in fact most of them hatched within three or four days after the first young were noticed.

Wisconsin — U. C. Boss (May 25): This insect has been reported as attacking the apple at Oshkosh.

HALF-WINGED GEOMETER (Phigalia titea Cramer)

New York — C. R. Crosby and assistants: In Rockland County the half-winged geometer is still very plentiful, feeding slightly on the young trees. Caterpillars of several sizes are common on young apple

trees throughout the county. They attack the fruit as well as the foliage, eating off the skin of the young apples, at Spring Valley.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

Pennsylvania S. W. Frost and Anthony Berg (June 8): The apple flea-weevil has been found mining the leaves of the apple at Morgantown, W. Va., This insect was present in considerable numbers.

FLEA-BEETLES (Systena taeniata Say and S. hudsonias Forst.)

Pennsylvania S. W. Frost and E. M. Craighead (June 8): Two flea-beetles have been found serious on apple seedlings in Adams County; Systena taeniata Say and Systena hudsonias Forst. The former was by far the more numerous.

IMBRICATED SNOUT-BEETLE (Epicaerus imbricatus Say)

Illinois W. P. Flint (June 19): Imbricated snout-beetles have been sent in with reports of damage to corn, strawberries, soy beans, and apple buds. This insect has been reported from Jersey, Green, Henry, Marshall, Putnam, Mercer, and Johnson Counties. Beetles have been sent in from other points in southern, central, and northern Illinois.

Nebraska M. H. Swenk (June 15): In eastern Otoe County a young orchard chiefly of apple trees was largely defoliated during the second week in June by the imbricated snout-beetle.

NEW YORK WEEVIL (Ithycerus novehoracensis Forst.)

Illinois J. H. Bigger (June 16): This insect cut two-thirds of the twigs off of 20-acres of 2 and 3 year-old trees in Calhoun County.

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

Massachusetts A. I. Bourne (June 23): Under date of June 18, Mr. E. R. Farrar reports that mites on apple trees and some ornamentals were increasing to a considerable extent, owing to the long period of hot dry weather, so that they were causing a marked shading off in color of foliage. Heavy rains in the vicinity of Lincoln about the 15th or 16th checked this condition to some extent.

New York C. R. Crosby and assistants: This pest is not bad in Orleans County; abundant in several orchards, but not serious to date in Genesee County, while in Ontario County they are found in most orchards and are quite abundant where thorough spraying has not been done. In Chautauqua County some have been found occasionally but not in serious abundance. They are quite prevalent in Dutchess County but no special injury has been reported.

PEAR

PEAR-LEAF BLISTER-MITE (Eriophyes pyri Pgst.)

New York — C. R. Crosby and assistants: In Ulster County this mite was found common, though serious in but one orchard, while in Monroe County, moderate damage was noted in unsprayed orchard. It has been found quite generally on the water sprouts and suckers in pear orchards, and prevalent generally but only of minor importance in Genesee County. In Oswego County it is quite prevalent in unsprayed orchards throughout the county. It is unusually abundant in Orleans County on pears this year, very bad in general. It has been found in quite a few orchards in Ontario County, and is quite prevalent in one pear block in the nursery at Honeoye Falls.

Washington — A. L. Melander (May 29): In an orchard half way between Steptoe and Cashup, which had apple and pear trees intermixed, the apple leaves were all badly blistered by the blister-mite while one of the pear leaves showed the work of this mite. I believe our western apple blister mite has been identified by Bureau experts as the same species as the pear-leaf blister-mite.

CALIFORNIA PEAR SAWFLY (Gymnonychus californicus Marlatt)

Washington — A. L. Melander (May 29): Yesterday in driving from Spokane I stopped at an orchard halfway between Steptoe and Cashup and noted pear leaves with circular holes, evidently the work of Gymnonychus californi The young larvae were eating their way around and around in the circular openings. We have no record of this insect in Washington, so I thought you would be interested.

PEAR MIDGE (Contarinia pyrivora Riley)

New York — C. R. Crosby and assistants: 10 to 15 per cent injury was observed in one orchard in Genesee County. One orchard at LeRoy has been found infested with this pest, attacking the Lawrence variety particularly. It was also found at Bethany. In Ulster County they have left the pears and are in the soil. This insect is increasing in importance this year.

M. D. Leonard (May 29): Young pear fruits badly infested with larvae were received from P. L. Huested. (April 23): This insect was reported as abundant on this date on Clapp's Favorite at Blauvelt.

PEACH

ORIENTAL FRUIT-MOTH (Laspeyresia molesta Busck)

Connecticut — Philip Garman (June 21): Only a few twigs are infested.

Virginia L. A. Stearns (June 21): For the first time this insect is found in most of the larger commercial orchards in this section; the first brood of worms are now full grown; their feeding has resulted in widespread and serious twig injury, and considerable damage to late ripening varieties of peach is anticipated.

GREEN PEACH APHID (Myzus persicae Sulz.)

New York C. R. Crosby and assistants: The green peach aphid is unusually abundant this year on the growing tips in Orleans County. In Wayne County it has been noticed in various parts of the county, but does not seem to be abundant enough to be serious.

Delaware C. O. Houghton (May 15): This insect was reported attacking peach at Newark, and Bridgeville, and more abundant than in an average year.

CHERRY

CHERRY APHID (Myzus cerasi Fab.)

Massachusetts A.I.Bourne (June 23): The black cherry aphid proves to be very abundant on sweet cherries.

New York C. R. Crosby and assistants: This aphid is abundant in Ontario County on one or two sweet cherry trees, but no complaints have been received. In Orleans County, theybwere plentiful very early, but largely destroyed by Syrphus maggots and ladybird beetles, while in Ulster County, they were numerous in general, except in five orchards where early aphid sprays were used. In Genesee County they are only found slightly, at LeRoy.

Idaho D. B. Whelan and Claude Wakeland (June 8): Undersides of terminal leaves of cherry at Wendall were covered with aphids. Cherry trees in Boise were observed badly infested with aphids, many winged.

PEAR SLUG (Caliroa cerasi L.)

Idaho Don B. Whelan (May 28): Eggs of the pear slug were abundant on cherry and pear leaves. None observed have hatched yet.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts A. I. Bourne (June 23): The curculio is found generally distributed throughout all the blocks, particularly serious on the plums of all varieties, and along the borders of all the apple blocks, especially those in grass. In Bristol County reports indicate that the plum curculio is very abundant

in that section and observers are finding a considerable amount of fruit scarring, the result of their work. Mr. A. R. Jenks of West Acton, in Middlesex County, reports in his region that curculio damage seems to be very severe.

Connecticut W. H. Barrow (June): Some orchards have secured very good control by following up the calyx spray soon with two more applications.

New York C. R. Crosby and assistants: Plum curculio is generally serious over the fruit section of the State. Damage on pears and apples in some cases quite as serious as on plums, Infestations running as high as 40 per cent in Genesee County and 50 to 60 per cent in Dutchess County have been recorded.

Delaware C. O. Houghton (May 15): A moderate amount of injury to various fruits is appearing here and elsewhere in the State.

North Carolina R. W. Leiby: The first curculio secured by jarring peach trees at Aberdeen, March 26, was one day earlier than in 1922. Emergence has been erratic. Prospects are for a light infestation for 1923, owing to severe winter conditions and a comparatively small number going into hibernation last fall because of a successful control campaign waged throughout the season of 1922. The first egg was secured this season in the insectary on April 14, and and the first egg was found in the field on April 19.

Georgia Oliver I. Snapp (June 20): The adults of the first generation began to emerge from the soil June 7, 1923. They were leaving in numbers for 10 days following. It is believed that only the Georgia Bells and Elbertas will be attacked by second-generation larvae this year. It has been found that the newly emerged beetles feed for a period of 10 days or two weeks before egg deposition, and this will give the Hiley, an important commercial variety of peach in Georgia, time to mature and be harvested before being attacked by the second brood. Parasites of C. nenuphar are unusually numerous this year. Triaspis curculionis is the most common parasite in Georgia. Some parasite boxes containing C. nenuphar larvae show parasitism of over 14 per cent.

Wisconsin S. B. Fracker (June 15): The curculio is very bad in places in Dane County, and is also reported from Jackson County, Madison, and Black River Falls. It is more abundant as compared with an average year.

Louisiana T. H. Jones (May 22): The first adults issued today from "drops" collected on April 24 and kept in a jar in a well ventilated insectary.

PLUM APHID (Hysteroneura setariae Thos.)

Massachusetts A. I. Bourne (June 23): The plum aphid is present in considerable numbers, particularly on a few of our Burbank trees.

Texas — O. G. Babcock (May 9): Many complaints have come in regarding the black plum aphid.

New Mexico — W. E. Emery (May 28): These aphids are doing quite a bit of damage, causing the plums to turn yellow and fall.

RASPBERRY

A WEBWORM (Crambus sp.)

New York — C. R. Crosby (June 4): The larvae eat the smaller shoots off near the surface but do not seem to burrow very deeply. The raspberry plants were set out in a field plowed this spring. It was an old meadow.

ROSE SCALE (Aulacaspis rosae Bouche)

Indiana — J. J. Davis (June 20): This scale is very abundant in many sections of southern Indiana, in many cases being largely responsible for the death of shoots before fruit matures.

RASPBERRY FRUITWORM (Byturus unicolor Say)

Connecticut — B. H. Walden (June 23): Injury is largely confined to the St. Regis in New Haven County; fully as abundant as in an average year.

New York — C. R. Crosby and assistants: In Chautauqua County one berry patch was found badly infested by this pest, which was observed abundantly in only two locations in Ulster County, though plentiful in general. It is very abundant and destructive in one patch in Silver Creek, and at Sodus in Wayne County the beetle was injuring over 80 per cent of the blossom clusters in one planting.

RASPBERRY SAWFLY (Monophadnoides rubi Harris)

New York — C. R. Crosby and assistants: The raspberry sawfly is plentiful in all plantings in Chautauqua County, considerable damage being done.

RASPBERRY MAGGOT (Phorbia rubivora Coq.)

Maine — Mr. J. M. Mosher reports this insect as seeming to attack younger canes than the cane-borer beetle. In this case the canes are about 18 inches high. The infested canes are quite numerous. Maggots are still very young.

GRAPE

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Massachusetts — A. I. Bourne (June 23): From Middlesex County, E. R. Farrar, of South Lincoln, reported under date of June 18 that the rose chafer is present in approximately 10 per cent greater amount

than is normally the case, and that it began to make its appearance in that section about the 15th of the month. The first rose chafers were seen on the 12th of June and they are with us in numbers somewhat greater than normal. Several complaints have come in of their work on young fruit trees as well as on roses, grapes, and ornamentals, on which they are normally found.

Connecticut — W. E. Britton (June 23): The first beetles were seen on June 10, apparently more abundant than last year.

J. A. Manter (June 22): This insect was found injuring small apples to quite an extent at Mansfield, being a little more abundant than in an average year.

New York — E. P. Felt (June 21): This insect is doing considerable injury at North Chatham.

C. R. Crosby and assistants: Some injury is generally distributed in Dutchess County, while in Ulster County the insect is found causing injuries to grapes, roses, and peonies, and serious in three apple orchards. Injury has been noticed on newly set apples in Genesee County.

Virginia — W. J. Schoene (June 7): Damage is very severe, especially on grapes in the southern half of the Shenandoah Valley. The pest is also abundant in a large number of orchards in the same territory.

L. A. Stearns (June 21): The rose chafer was more numerous than usual during the first two weeks in June.

North Carolina — F. Sherman (June 8): This insect occurs throughout the State, but complaints of serious damage to apple, cherry, grape, etc. are always from our mountain area exclusively. Two reports on June 5 indicate it as destructively prevalent in two adjoining mountain counties, Buncombe and Henderson.

Ohio — E. W. Mendenhall (June 13): The rose chafer is doing great damage to grapes, and apple trees, and to cherry tree leaves and fruit.

T. H. Parks (June 23): Rose chafers are reported uncommonly injurious to various crops, including young corn, roses, cherry leaves, grapes, and garden beans.

Indiana — J. J. Davis (June 19): Report has been received that the rose chafer is injuring roses at Culver, eating fruit at Fort Wayne, where it is abundant and destructive to apple, and is eating foliage and fruit at Columbus, Ind. In some cases apples are eaten to the core.

Tennessee G. M. Bentley (June 14): The rose chafer has been prevalent and is a serious pest in many of the counties. It ate the partly developed fruit.

GRAPE ROOTWORM (Fidia viticida Walsh)

New York C. R. Crosby and assistants: In vineyards unsprayed last year, the rootworm is causing serious injury in nearly all parts of the grape belt, and in three or four vineyards has caused a loss of 20 to 30 per cent of the vines, in Chautauqua County. Typical foliage injury is showing up considerably in some localities.

GRAPE BLOSSOM MIDGE (Contarinia johnsoni Sling.)

Michigan R. H. Pettit (June 15): Mr. Harman has just come back with specimens of the grape blossom midge. He reports from 3 to 5 per cent damage all over the vineyards visited and brings back specimens which proved the identity of the pest. As this is rather a new thing in Michigan, I am sending you this information. It has been present in one vineyard in Michigan, for three years but has been kept down by hand picking until the present season. It therefore bids fair to add one more to the list of grape troubles in our State.

A WEEVIL (Rhigopsis effracta Lec.)

California California Weekly News Letter, Vol. 5, No. 12 (June 16): Mr. John P. Coy reports a serious attack by the weevil Rhigopsis effracta on grapevines. He states that it confines its attack pretty much to the buds and tender growth and has been working on young grapevines, killing the new growth as fast as it shows up, and has destroyed a patch of sweet potatoes. Mr. Coy states that so far he has not been able to get satisfactory results with any insetticides.

W. D. Pierce (May 31): Specimens of Rhigopsis effracta Lec., a weevil, were sent in by Harry Smith, with the report that they were damaging the tender growth of grapevines. So far as I know this is the first charge against this species, which has formerly been reported as from yucca. The specimens are from San Bernardino County, and I presume are doing this damage because of the breaking of new ground. They are probably root weevils.

GRAPE PLUME MOTH (Oxyptilus periscelidactylus Fitch)

Massachusetts A. I. Bourne (June 23): A few clusters pulled together by the larvae of the grape plume moth have been found through the vineyard, but this is not at all serious.

GRAPE LEAFHOPPER (Erythroneura comes Say)

Massachusetts A. I. Bourne (June 23): We are finding very few grape leafhoppers in the orchard this season.

New York — C. R. Crosby and assistants: This insect is appearing more numerous everyday. Many growers are becoming alarmed, and are investing in sprayers, in Chautauqua County. They are also abundant on raspberries and strawberries, but there has been little migration to the grapes in this county. Except in limited areas very near the lake, the hopper is very abundant now and is turning a few leaves brown. In Ulster County first nymphs were seen June 13, while in Dutchess County severe infestations are to be found in some places. In Seneca County it is also severe in a number of vineyards, and is particularly noticeable where grass, hedgerows, etc., are near the vines.

Pennsylvania — G. A. Runner (June 1): During the last week in May overwintering adults of several species were found extremely abundant in the more important grape-growing districts of Pennsylvania. Adults of E. comes were just beginning to migrate to the grape leaves in Erie County, Pa.

Ohio — G. A. Runner (June 1): During the last week in May overwintering species were found extremely abundant in the more important grape-growing districts of northern Ohio. Adults of E. comes were just beginning to migrate to the grape leaves in northeastern, Ohio.

GRAPE FLEA-BEETLE (Haltica chalybea Ill.)

New York — C. R. Crosby and assistants: The grape flea-beetle is abundant in Orleans County this year and has caused severe injury to the buds in one vineyard near Eagle Harbor.

Nebraska — M. H. Swenk (June 15): During the first half of June, larvae of the grapevine flea-beetle were repeatedly reported doing serious injury to grape foliage in eastern Saline and southern Lancaster County.

CURRANTS

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

Connecticut — W. E. Britton and J. A. Manter (June 22): Four-lined leaf-bugs have just matured, and some bushes will be seriously injured. The insect was also observed in Hamden June 23.

New York — C. R. Crosby and assistants: Large numbers have been observed in numerous currant plantings. First, second, and third-stage nymphs are present, common, and general, and are destructive in two currant patches and one gooseberry patch. They are abundant in one planting in Ontario County.

IMPORTED CURRANT BORER (Aegeria tipuliformis Clerck)

New York C. R. Crosby and assistants: This insect is very common and generally destructive in Ulster County, and also very abundant and destructive in a planting near Westfield.

CURRANT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants: The currant aphid is rather serious in Genesee County in neglected plantings, increasing rapidly in several plantings. It is exceedingly abundant on all unsprayed plantings. It is generally abundant in Orleans County, while in Ulster County it is common in most plantings except where the late dormant spray was applied.

IMPORTED CURRANTWORM (Pteronidea ribesi Scop.)

Massachusetts A. I. Bourne (June 23): The imported currantworm is proving to be quite abundant on the blocks of currants. Inasmuch as there were no currants on the plantation last year, very little regarding relative abundance can be given.

New York C. R. Crosby and assistants: This insect is rather abundant in a few plantings in Ontario County, and very common and abundant in all plantings in Chautauqua County, while in Genesee County it is found in neglected plantings. It is abundant in Honeoye Falls. In Ulster County it has been serious only where no control measures were practised.

GOOSEBERRY

IMPORTED CURRANTWORM (Pteronidea ribesi Scop.)

Nebraska M. H. Swenk (June 15): The imported currantworm did considerable damage in stripping gooseberries between May 15 and June 5, but no more than is usual for that pest.

CRANBERRY

BLACK-HEADED CRANBERRY WORM (Rhopobota naevana Hueb.)

Massachusetts A. I. Bourne (June 23): The black-headed fireworm on cranberry is much less abundant on the bogs than usually, at this time of year.

PECAN

SPITTLE INSECT (Cercopidae)

Louisiana T. H. Jones (May 10): Nymphs of an undetermined ceroopid on new growth of pecan were sent in by a correspondent, O. E. Hamilton, without accompanying letter.

PECAN PHYLLOXERA (Phylloxera devastatrix Perg.)

Mississippi R. W. Harned (June 23): This insect is attracting even more attention on pecan trees this year than was the case last year.

Louisiana T. H. Jones (June 13): From the middle of May to the present date pecan phylloxera has been the subject of complaint from various parts of the State, in some cases entire trees 50 to 60 feet high being badly infested.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi R. W. Harned (June 23): Present prospects indicate that this pest will be more serious than it has been during the past two years. It was very serious in 1921 and more so in 1922. This year complaints have been received from all sections of Mississippi while last year very few reports were received from the southern part of the State.

CITRUS AND SUBTROPICAL FRUITS

CITRUS

PURPLE SCALE (Lepidosaphes beckii Newman)

Louisiana T. H. Jones (May 25): Infested material was sent in by Charles A Mundy, at Thibodaux.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Louisiana T. H. Jones (May 25): Infested material was sent in by Charles A Mundy.

TRUCK-CROP INSECTS

POTATO AND TOMATO

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata* Say)

Massachusetts — A. I. Bourne (June 23): The Colorado potato beetles on potatoes and tomatoes were present in large numbers and seemed unusually abundant. The dates of appearance varied somewhat in different fields according to the stage of development of the potato plants, but in most cases here in this immediate region the beetles seemed to be present in unusually large numbers.

New York — C. R. Crosby and assistants: Potato beetles were appearing in considerable numbers on Long Island, mating and ovipositing by June 9. By the middle of the month they were numerous in western New York.

Wisconsin — S. B. Fracker (June 15): The season in Wisconsin is very backward, but, apparently, potato beetles are not as common as usual.

Illinois — S. C. Chandler (May 16): At East St. Louis eggs are somewhat less numerous than ordinarily. None have hatched as yet. Weather is preventing injury by old beetles. (May 21): First eggs are hatching, later than usual. (May 28): Potato beetle grubs evidently are somewhat more numerous than last year.

W. P. Flint (June 19): The Colorado potato beetle is rather scarce in central Illinois, but slightly more abundant than usual in the southern part.

Iowa — Fred D. Butcher (June 4): Adults are present in large numbers in Lee County. One patch examined had one or more egg clusters on every plant. According to observation on May 30, only a few eggs have hatched.

South Dakota — H. C. Severin and A. L. Ford (June 8): Colorado potato beetles are just laying eggs.

POTATO FLEA-BEETLE (*Epitrix cucumeris* Harr.)

Massachusetts — A. I. Bourne (June 23): Slightly greater than normal numbers of flea-beetles are being found on tomato plants, as well as on potatoes.

Connecticut — F. L. Davis (June 19): Potato flea-beetles are attacking potatoes at Woodstock, with an estimated damage of 4 per cent. They are more abundant than last month and in an average year. Bordeaux should be applied earlier than is the common practice.

New York — C. R. Crosby and assistants: This pest is present in large numbers and doing considerable damage in Nassau, Ulster, Dutchess, Rensselaer, and Orleans Counties; it is also reported but less numerous from Chenango, Chautauqua, Ontario, Madison, and Wayne Counties.

Delaware — J. F. Adams (May): Considerable injury to seed beds of tomato has been caused by this species, as usual. Another species, probably Systena taeniata, also has been quite injurious to these beds in certain places.

Wisconsin — C. F. Fluke (June 22): With the first appearance of potatoes above ground the flea-beetles appeared in large numbers, puncturing the leaves full of holes. They were more numerous than for several years.

North Dakota — R. L. Webster (June 20): Severe injury was done to potato foliage at Fargo.

WESTERN POTATO FLEA-BEETLE (Epitrix subcrinita Lec.)

Idaho — Claude Wakeland (May 26): The severe injury of this season to potato and tomato, while localized at Parma and Roswell, indicates that control measures may be necessary in the future.

Don B. Whelan (May 28): Several commercial potato fields around Kimberly are severely affected.

POTATO APHID (Macrosiphum solanifolii Ashm.)

Connecticut — S. Tucker (June 20): This insect is attacking potatoes at Danbury.

Illinois — S. C. Chandler (June): First observed at East St. Louis on May 21 and very abundant on June 8.

POTATO LEAFHOPPER (Empoasca mali LeB.)

Iowa — Fred D. Butcher (June 4): Crop of potatoes very late in Lee County. Leafhoppers found on early patches, 1 to 5 per plant, May 30.

CUTWORMS (Noctuidae)

New York — K. E. Paine (June 15): Cutworms are abundant enough in one field of tomatoes in Chautauqua County to cause almost complete loss.

SWEET POTATO

TWO-STRIPED SWEET-POTATO BEETLE (Cassida bivittata Say)

Iowa — Fred D. Butcher (June 9): Larvae are found on nearly every plant in a quarter acre in Monroe County. Leaves are dying.

CABBAGE

CABBAGEWORM (Pontia rapae L.)

New York — E. W. Pierce (June 8): The cabbageworm was first observed about cabbage this week in Ontario County.

CABBAGE MAGGOT (Hylemyia brassicae Bouché)

New York — W. D. Mills (May 26): This insect is causing considerable injury on early cabbage in the field in Nassau County. Attempts on a large scale have been made to reduce the amount in fields already infested by applying corrosive sublimate with a cart and hand-pressure tank. (June 2): The injury from the cabbage maggot is becoming evident in many fields of early cabbage. Kohl-rabi and cauliflower are also heavily infested. Many growers who used tar and sand were attempting to check the amount of maggot injury by an application of corrosive sublimate during the past week.

E. W. Pierce (May 26): Maggot flies have been commonly observed in Ontario County, but they do not seem to be as abundant as they have been the past two years. (June 8): Maggots were first noticed on June 8. Those observed were evidently several days old. (June 15): Flies are abundant, and maggots have been working on the roots for the last 10 days.

R. G. Palmer (June 15): This pest is not severe so far in Monroe County.

R. F. Illig (June 16): The cabbage maggot in Wayne County is serious in seed beds which were not protected from the flies.

CABBAGE APHID (Brevicoryne brassicae L.)

Wisconsin — R. H. Clark (June 11): Cabbage aphids are bad on cabbage and radishes at Tomahawk.

Illinois — Chas. C. Compton (June 13): At Chicago an acre field of early cabbage was found very heavily infested with the cabbage aphid, resulting in the death of many plants that had begun to head. Other fields in the vicinity are but slightly infested at this date.

Nebraska — M. H. Swenk (June 15): Heavy injury to cabbage plants by this pest was reported in certain fields in Buffalo County during the first few days in June.

STRIPED FLEA-BEETLE (Phyllotreta vittata Fab.)

New York — E. W. Pierce (May 28): The striped flea-beetle is causing serious injury in many cabbage seed beds in Ontario County.

R. G. Palmer (June 15): This insect is abundant on cabbage in Monroe County.

WESTERN FLEA-BEETLE (Phyllotreta pusilla Horn)

Idaho — Claude Wakeland (May 26): Severe injury has been done to cabbage and cauliflower seedlings in the field at Parma and in cold frames. Early radishes are badly damaged. The pest is much more abundant than last season.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Indiana — J. J. Davis (June 15): On May 15 injured cabbage plants, the injury almost certainly that of the cabbage curculio, were received from Connersville.

FALSE CHINCH BUG (Nysius ericae Schill.)

North Dakota — R. L. Webster (June 18): This makes three reports of injury to flax. This insect is also attacking cabbage and radish in Adams and Stutsman Counties.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

New York — C. C. Wagoner (May 26): Good control was obtained by dusting arsenate of lead and sulphur (parts 1 to 5) in Ulster County. The second application is now being applied. (June 15): The strawberry weevil is numerous in general in Ulster County, causing from 30 to 90 per cent injury where no control measures were employed.

Delaware — J. F. Adams (May 9): Serious injury is reported to certain varieties of strawberry, especially "Big Joe". One grower also reports injury to apple trees at Bridgeville.

Minnesota — A. G. Ruggles (June 7): The strawberry weevil has been reported from a number of parts of the State doing considerable damage.

STRAWBERRY FLEA-BEETLE (Haltica ignita Ill.)

Maine — E. M. Patch (June 8): This is the second lot of beetles received within a few days from locality of Bridgton. We do not often have complaints about this insect.

New York — P. D. Rupert (June 15): Moderate injury has been caused in Dutchess County.

C. C. Wagoner (June 15): The strawberry flea-beetle is serious in only one planting in Ulster County.

A FLEA-BEETLE (Haltica litigata Fall)

Louisiana — T. H. Jones (May 21): Numerous adults were sent in by a correspondent from Newllano, Vernon Parish, with information that "they seem to go in colonies and eat the leaves of the berries".

FOUR-MARKED LEAF-BEETLE (Cryptocephalus quadrimaculatus Say)

North Dakota — R. L. Webster (June 12): The four-marked leaf-beetle is feeding mostly in axils of leaves and causing considerable damage at Fargo.

STRAWBERRY LEAF-BEETLE (Paria canella Fab.)

New York — W. D. Mills (May 28): The beetles were found abundant in several plantings in Nassau County, causing considerable damage to the foliage.

J. B. Palmer (June 4): Specimens were received from Bernhards Bay, Monroe County.

C. C. Wagoner (June 15): This insect is general and has potentialities of a good deal of destruction in Ulster County.

WHITEFLY (species undetermined)

Idaho — D. B. Whelan (June 8): Strawberry plants dead at Wendall. Nearby ones have whitefly on the under sides of leaves. Hundreds of the insects are found on each plant. They are much more abundant than in an average year.

A STRAWBERRY RED SPIDER (Tetranychus sp.?)

California — W. D. Pierce (May 31): The strawberry red spider is causing abandonment of many plantings near Mountain View.

STRAWBERRY SAWFLY (Empria maculata Norton)

Minnesota — A. G. Ruggles (June 7): One of the worst pests of the strawberry that we have had for many years is one of the sawfly larvae, probably Empria maculata.

ASPARAGUS

ASPARAGUS BEETLES (Crioceris asparagi L. and duodecimpunctata L.)

Massachusetts — A. I. Bourne (June 23): The asparagus beetle larvae of Crioceris asparagi and Crioceris duodecimpunctata are present in large numbers and are working with about normal activity.

New York — R. G. Palmer (June 15): Crioceris duodecimpunctata are very severe this year in Monroe County.

K. E. Paine (June 15): Asparagus beetles are very abundant in all beds in Chautauqua County. (June 16): Beetles are abundant in almost all asparagus beds.

Delaware — C. O. Houghton (May 15): Asparagus beetles are very abundant on asparagus at Newark. First examples were observed May 2.

Indiana — J. J. Davis (June 15): Reports of injury by asparagus beetles have come to us from sections of central Indiana.

BEANS

PALE-STRIPED FLEA-BEETLE (Systena taeniata var. blanda Melsh.)

Virginia — W. J. Schoene (June 20): The pale striped flea-beetle has been abundant and inflicted severe damage upon beans and tomatoes in the vicinity of Richmond.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

orth Carolina F. Sherman (June 8): Scouting at the close of 1922 showed the Mexican bean-beetle in 8 southwestern mountain counties. J. C. Crawford, formerly with the U. S. Bureau of Entomology and the National Museum, is conducting a Field Station for this insect at Bryson City. It was also reported with specimens May 10 from Culberson, Cherokee County, which is close to the Georgia-North Carolina Line. From May 22 to June 6 it has been found at various localities, representing most of its present range in the State.

outh Carolina Neale F. Howard (June 11): This pest is reported as doing serious damage in western South Carolina.

J.A. Berly (June 14): This pest is reported from Walhalla and vicinity, also from Oconee County with a statement that it is attacking snap beans. Considerable damage has been done in gardens on beans.

eorgia Neale F. Howard (June 11): This pest is reported as doing serious damage in the northeastern part of the State.

entucky H. Garman (June 11): The Mexican bean beetle is attacking beans in Owsley County.

ennessee Neale F. Howard (June 11): This pest is reported as doing serious damage in the eastern part of the State. Prof. G. M. Bentley writes that many inquiries are received at his office every day and that "it is creating havoc in this State."

G. M. Bentley (June 13): This pest has been located by us recently in 8 new counties in the State. These are Pickett, Clay, Jackson, Macon, Trousdale, Sumner, and Cheatham.

labama Neale F. Howard (June 11): Dr. F. L. Thomas reports this pest from Auburn, in Lee County.

ississippi Neale F. Howard (June 11): Professor Harned reports this insect from Itawamba County in the northeastern part of the State. This is the eighth State known to be infested with this insect in the southeastern United States.

BEAN LEAF-BEETLE (Cerotoma trifurcata Foerst.)

ennessee G. M. Bentley (June 13): This pest has been damaging the bean crop in a number of counties this year. The reports were made during the months of April and May. It has disappeared at present.

llinois S. C. Chandler (May 29): At Pulaski nearly all bean fields are infested. Leaves were badly riddled May 12, but beetles are now leaving and plants are generally recovering.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

New York — C. R. Crosby (June 14): Injured bean seedlings have been received from Livingston County. (June 18): Infested beans have been received from Rodman.

R. G. Palmer (June 15): This pest is severe in many bean plantings in Monroe County.

Tennessee — G. M. Bentley (June 13): This pest proved very serious in Knox County to the snap beans. Several acres were completely killed. Fresh tankage had been applied on the surface where injury was serious.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Kansas — J. R. Horton (June 8): The first complaint that has come to my attention in this State was from Sedgwick County, on May 21. It is reported as injurious to cotton in Oklahoma and Texas, eastward to the Carolinas.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Connecticut — B. G. Southwick (June 22): The pea aphid is attacking peas, apples, and potatoes in Hartford County. Infestation is 110 per cent as compared with an average year. Ladybugs are present.

New York — W. D. Mills (June 9): This pest is very abundant in Nassau County. Peas are now generally in bloom or past the bloom stage.

Roy Latham (June 20): Peas are raised at Orient only in gardens. Normal abundance is noted.

Ohio — T. H. Parks (May): These aphids, which have been plentifully scattered throughout alfalfa and red clover, are now heavily parasitized. Their presence has not interfered with the growth of the crops. We have had one week of dry, warm weather. (June 23): One field of alfalfa is known to have been plowed under because of damage from this aphid. It has now been killed by fungus and parasitic and predacious insects. Infestations occur in western and central counties.

Illinois — W. P. Flint (May 18): This insect is present in moderate numbers in pea fields. No damage has been reported as yet.

Michigan — R. H. Pettit (June 16): With regard to the pea aphid, I visited the Jackson fields on Wednesday and found the aphids present in moderate numbers. In a few instances they amount to a fraction of 1 per cent. I found little colonies of females with a family of young at the tip of the plant. The Jackson area is partly in bloom, although the pods in some fields are well formed and the peas half-grown. They expect to cut in less than ten days for the most part. This morning I received a letter from the agriculturist for the W. R. Roach Canning Co.,

Grand Rapids, in which he reports entirely similar conditions in the pea canning areas of the western part of the State. He feels that the hazzard to pea canners has almost passed and I have advised a policy of watchful waiting with everything ready to dust should developments warrant dusting. In other words, I think we are going to get by this year, but we came altogether too near the trouble to feel easy.

Wisconsin — J. E. Dudley (May 28): Aphids are attacking clover and alfalfa in Columbia and Jefferson Counties. They are probably less abundant than in the average year, and they are slowly but steadily increasing. There is no apparent damage as yet. On one 10-acre field a moderate infestation of the aphid has already been controlled 80 per cent by ladybeetles, which are very numerous. The season in this State is from 10 days to 2 weeks behind normal.

New Mexico — W. E. Emery (May 28): This aphid has just commenced to attack the garden peas in Dona Ana County.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Connecticut — J. A. Manter (June 22): The striped cucumber beetle is more abundant than usual at Mansfield on summer squash. Many plants would have been killed except for the control used.

New York — C. R. Crosby and assistants: The striped cucumber beetle appeared during the second week in June on Long Island in very serious numbers and was recorded as seriously abundant about the middle of the month in western New York.

Virginia — W. J. Schoene (June 20): This pest is rather severe on squash and melons from the Piedmont and the Coastal Plain to tidewater.

Indiana — J. J. Davis (June 15): This pest has been the subject of numerous complaints the past month.

Kentucky — H. Garman (June 14): This insect is attacking cucumbers at Bowling Green, causing severe damage.

Wisconsin — Van W. Cass (June 10): The striped cucumber beetle is very bad on cucumbers in the locality of Madison.

J. E. Dudley, Jr. (June 11): The striped cucumber beetle is attacking melon, cucumber, and squash at Madison. It is less abundant than usual for this time of year, but the season is quite backward. Only one or two beetles were seen in May. Seedling cucumbers are entirely destroyed where no dusts have been applied. Two species of ground beetles are present. Calcium cyanid dust containing 15, 25, and 50 per cent of calcium cyanid has been remarkably effective in killing beetles on cucurbits. Even beetles caught in flight die immediately. There appears to be no question that this dust will be completely effective against this insect.

Illinois — Chas. C. Compton (June 12): Cucumbers and squash are suffering severely from the attack by the striped cucumber beetle in the Chicago trucking district. Where no control has been practiced the plants have been killed outright.

South Dakota — H. C. Severin and A. L. Ford (June 8): This pest is attacking cucurbits throughout the entire State. Considerable damage is done.

MELONS

MELON APHID (Aphis gossypii Glov.)

Iowa — Fred D. Butcher (June 9): The first aphid was discovered on watermelons on June 8 in Monroe County. Winged adults were easily found on a 1½ acre patch. Only one colony was located.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Massachusetts — A. I. Bourne (June 23): H. F. Tompson, in charge of the Field Station at Lexington, reports finding an unusually large number of squash bugs, particularly during the week of June 10. Squash bugs are proving to be present in considerable abundance -- somewhat greater than normal. The first eggs laid in the field were observed about the 20th of the month.

Georgia — O. I. Snapp (June 11): Squashbugs are very numerous and were causing serious damage to 20 acres of watermelons near Perry, Ga. Growers are hand-picking and spraying with nicotine sulphate.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Massachusetts — A. I. Bourne (June 23): The greater part of the last 10 days of May and thus far in June has been very dry, so that fields and crops already begin to show some effects of the drought. This has had another effect in that here in the Valley the onion thrips has begun to make its appearance much earlier than we normally expect to find it and is fast spreading. Finding weather conditions ideal for its increase, it is in some fields, particularly where seed onions have been planted near sets, beginning to cause some alarm.

New York — H. C. Huckett (June 14): The thrips is infesting onions and seedling cauliflower in Suffolk County.

ONION MAGGOT (Hylemyia antiqua Meig.)

New York — A. G. Newhall (June 9): Injury was first observed during the past week in Wayne County.

F. H. Bond (June 13): It is not at all general or serious so far this year in Oswego County. (June 16): Onion maggots were found on June 13.

Wisconsin — J. E. Dudley, Jr. (June 7): Thrips are attacking onion in parts of Racine County. They are more abundant in certain sections. The season is late, there is considerable rain, and the temperature is below normal. Onions are much smaller than normal and maggots are developing as rapidly as in a normal season; consequently damage to small onions is considerably greater than usual.

Illinois — Chas. C. Compton (June 12): The onion maggot is much more severe this year than last. Onions grown for sets are suffering most. At this time the injury is just beginning to show up in the Chicago district.

CUTWORMS (Euxoa sp.)

Indiana — J. J. Davis (June 15): Cutworms were received on June 5 from Akron, where they were reported as destroying onions on a large scale.

WIREWORMS (Elateridae)

New York — F. H. Bond (June 18): Considerable injury to onions on a bed of comparatively new muck was noted June 13 in Oswego County. Wireworms were found under plants in many cases, but it is not absolutely certain that they were the cause.

Idaho — Fred Maw (May): Do you know of any way to get rid of wireworms? Pheletes sp. are eating up the onion crop at Meridian.

MISCELLANEOUS FEEDERS

BLACK SWALLOW-TAIL BUTTERFLIES (Papilio polyxenes Fab.)

New York — A. G. Newhall (June 18): These butterflies are common on the muck where celery is grown and injury may, therefore, be expected later on.

GARDEN WEBWORM (Loxostege similalis Guen.)

Alabama — Neale F. Howard (June 11): This pest is abundant on sugar beets and Swiss chard in the Birmingham district.

GREEN FLEA-BEETLE (Disonycha sp. n.)

Porto Rico — R. E. Danforth (May 19): The new green flea-beetle with orange prothorax, Disonycha sp. n., common on beets and chard, is also attacking white potatoes and turnip leaves.

SPINACH LEAF-MINER (Pegomyia hyoscyami Panz.)

New York — W. D. Mills (June 9): This insect is becoming rather abundant on both spinach and beets, and it was also found to a considerable extent on Rumex acetosa in Nassau County.

CATERPILLARS

Iowa — Carl J. Drake (May 25): I have just received some rhubarb containing caterpillars tunneling the stalks. Carl Heinrich, of the U. S. Bureau of Entomology, states that it is a species of Pyralidae (Pyraustinae), but does not know the species.

ROOT-KNOT NEMATODE (Heterodera radicicola Greef-Mueller)

Nebraska — M. H. Swenk (June 15): The ruination of a patch of radishes in Morrill County by the root-knot nematode was reported during the middle of June.

CUTWORMS (Noctuidae)

New York — A. G. Newhall (June 1): Cutworms are attacking onions and lettuce at Williamson. Most cutworms are two-thirds grown. They were first observed near Sodus April 20 of this season. They seem to be less serious where fall plowing was done last fall or where the land was thoroughly worked this spring, planting the crop late. The poison mash bait works best after other food has become less abundant. For this reason it is most effective after the crop has been thinned and weeded. Cutworms have been found in one man's lawn doing much damage.

M. D. Leonard and H. Dietrich (June 15): Cutworms are attacking melons and tomatoes at Appleton. I see a lot of them when planting, but broadcasting bran, moistened and sprinkled with Paris green, does the trick.

F. H. Bond (June 18): Cutworms are doing considerable injury to lettuce, onions, and cabbage on a few farms in Oswego County. They are found in small numbers on practically all muck land, in most cases not doing enough damage to warrant application of poison bait. Cutworm injury was serious throughout the muck sections last year. The larvae are nearly mature and little more injury is expected.

Iowa — C. N. Ainslie (June 2): Complaints are heard on every hand at Sioux City of depredations of these pests. Gardens, potatoes, and corn are attacked and injured.

A WEEVIL (Hyperodes hyperodes Deitz.)

California — W. D. Pierce (May 31): The note on Listronotus sp. published last month (Vol. 3, p. 88) refers to this species.

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

New York — Roy Latham through M. D. Leonard (June 19): A few occur at Laurel, L. I., but they are very abundant at Calverton, where thousands were found in headlands of fields feeding on Bidens, Rubus, Ambrosia, and Rhus, but they seemed to prefer Bidens. They had started working also on beans near the edge of the field.

FALSE CHINCH BUG (Nysius ericae Schill.)

North Dakota R. L. Webster (June 15): Reports have come in from Adams and McIntosh Counties to the effect that these false chinch bugs were destroying flax. I can find no records in the literature of such injury. Nymphs feed on Russian thistle in fields and may be affecting weeds more than the crop.

GARDEN SLUG (Agriolimax columbianus Gld., Agriolimax agrestis L., and A. californicus Cooper)

California W. D. Pierce (May 31): Not only is the small garden slug bad here, but three huge woodland species at least are doing damage to gardens along creeks. These slugs reach 6 and 7 inches in length and eat all kinds of garden plants.

SNAIL (Helix aspersa Muller)

California W. Dwight Pierce (May 31): Much damage is being done on the Peninsula from San Bruno to Palo Alto by an imported snail, which was brought in by Frenchmen to eat. They are spreading rapidly and are very injurious. They are also at Oakland.

SOWBUG (Porcellio scaber Latr.)

California D. W. Pierce (May 31): Sowbugs, mainly Porcellio scaber Latr., are very bad here, and in fact all around the Bay, and very destructive to young plants.

AN APHID (Myzus braggii Gillette)

Louisiana T. H. Jones (June 4): A correspondent wrote to the experiment station, complaining of injury by "little green lice" to globe artichoke. No specimens were sent.

MILLIPEDS (Diploiulus luscus)

Michigan R. H. Pettit (May 28): A market gardener at Muskegon has a great deal of trouble with millipeds in muck. The millipeds were identified by Dr. Chamberlain at Washington as Diploiulus luscus, a species introduced long ago from Europe. The gardener has four acres of muck infested with these millipeds. They do serious injury to lettuce and celery; cabbage seems to come through with little damage.

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

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

North Carolina Franklin Sherman (June 8): Boll weevils have been reported from the following Counties: Moore, Harnett, Robeson, Scotland, Lenoir, Cumberland, Mecklenburg, Sampson (central part), and Cabarrus. At this date (June 7) it is evidently out in all our heavily infested

sections in the southeastern half of our cotton area. None have yet been received from the more northerly part invaded last summer, i. e., north of an east-and-west line drawn through Raleigh.

R. W. Leiby: The first authentic boll weevil was taken out of hibernation for season on April 17, and the second on April 24. Both were found on a canvas frame while jarring for the plum curculio on peach trees.

Geo. A. Maloney: The boll weevil has been reported as present at the following points: Laurinburg, Wadesboro, and Gibson.

South Carolina J. L. Walton (May 18): Reports from the Southern Cotton Oil Company's mill managers show that weevils have been found on young cotton at Dillon, S. C.

Geo. A. Maloney: The boll weevil has been reported as present at the following points: Bennettsville, Georgetown, Chester, Marion, Allendale, Sumter, Abbeville, Darlington, and Laurens, from May 12 to May 29, inclusive.

Georgia Geo. A. Maloney: The boll weevil has been reported as present at the following points: Vienna, Monticello, Fort Gaines, Cordele, Commerce, and Orangeburg, from May 29 to May 31.

J. L. Walton (June 1): A report from S. Schwarzweiss, cotton exporter, Waynesboro, Ga., indicates that the weevil is plentiful in practically all parts of Burke County, Ga.

Florida Geo. A. Maloney (May 29): The boll weevil has been reported as present at Madison on this date.

Alabama Geo. A. Maloney: The boll weevil is present at the following points: Clayton, Opelika, Elba, and Gadsden, on May 29.

Texas M. C. Tanquary (June 15): The percentage of boll weevil successfully emerging from hibernation in central Texas indicates a fairly heavy infestation for the early part of the season.

F. F. Bondy (May 23): Report indicates a fairly heavy infestation of the boll weevil at Hearne, Texas.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

South Carolina J. A. Berly (June 11): The fall armyworm destroyed 6 acres of cotton and 10 acres of vetch before being checked. It has been found in three places in this immediate vicinity, in each case starting on vetch. They were eating holes in the peaches on a few trees adjacent.

S. C. Stribling, County Agent (June 14): This insect is reported from Gaffrey as attacking cotton.

COTTON LEAFWORM (Alabama argillacea Huob.)

Texas — T. C. Barber (June 14): Worms have appeared in considerable numbers in several localities during the past week. The worst infestations have been observed in the neighborhood of Rio Hondo, but many can be found near Brownsville. Dusting the plants with calcium arsenate is being generally done to combat them.

BOLLWORM (Heliothis obsoleta Fab.)

South Carolina — Philip Luginbill (June 15): The caterpillars seriously injured vetch and when this was cut spread out and attacked adjacent crops, such as cotton, corn, and cowpeas.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina — F. Sherman (June 8): This insect was epidemic with us on young cotton in 1907, but seldom reported since until the last two years, when it was often mistaken for the boll weevil and also reported on account of its own injuries to young cotton. Its appearance in young cotton this year slightly precedes that of the boll weevil. Mildly epidemic with us now, it is reported from Wayne, Greene, Nash, Halifax, and Robeson Counties. The correspondence when explicit indicates that it is confined chiefly to lands which were in peas the preceding year.

COTTON APHID (Aphis gossypii Glov.)

Georgia — Geo. A. Maloney (May 29): Cotton lice have been observed at Vienna.

W. F. Turner (June 23): I am convinced that the main cause of their abundance was the use of calcium arsenate against the boll weevil. The lice get dusted with poison, and the main factor in their control, the Coccinellids, eating them with this frosting, are killed. That lets the aphids multiply in peace.

Louisiana — Geo. A. Maloney (May 29): Cotton lice have been observed at Tallulah, La.

Texas — Geo. A. Maloney (May 29): Cotton lice have been observed at Corpus Christi, Texas.

TOBACCO

CUTWORMS (Noctuidae)

Connecticut — John Fay (June 22): Cutworms have been reported from Portland, Conn., in much more destructive abundance than in an average year. Poison bait, hunting for worms by hand, and poisoned plants are remedies used.

SUGAR-CANE

ANOMALA (Anomala orientalis Waterh.)

Connecticut — W. E. Britton (June 23): White grubs believed to be this species have eaten the roots of grass in lawns on half a dozen premises in the immediate vicinity of where adults were taken in 1920 and 1921.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana — T. E. Holloway and W. E. Haley (May 24): Larvae are killing young plants at New Orleans and Franklin.

SUGAR-CANE BEETLE (Ligyrus (Euetheola) rugiceps Lec.)

Louisiana — T. E. Holloway and W. E. Haley (May 24): Adults have killed some young sugar-cane plants at Franklin.

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

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicen septendecim L.)

BROOD XIV (SEVENTEEN-YEAR RACE)

Massachusetts — A. I. Bourne (June 23): The 17-year locust has been reported as appearing in Pocasset (township of Falmouth) in great numbers on June 12. Most of the territory there has been burned over by a tremendous wood fire (May 23-26, last) so there is but little undergrowth and no foliage left. The cicadas are hanging from the dead scrub oaks and charred pine branches in vast numbers. Similar conditions existed on territory which escaped the ravages of the fire. So far I have no complete data on this brood, but from my personal observations its range is from near Monument Beach east to Sagamore, south to S. Sandwich and west to Pocasset.

New York — R. M. Lupton (June 7): The periodical cicada is very abundant in scrub oak sections on the central part of Long Island.

Pennsylvania — S. W. Frost (June 8): Locusts have been emerging in considerable numbers in Adams County, but no damage has been noted.

Maryland — W. L. McAtee (May 28): Specimens were sent to me for determination from Elkridge.

A. L. Quaintance (June 4): I heard yesterday in the wood on the back part of my farm a few periodical cicadas. I should judge there were 10 or 12 of these insects within hearing distance.

Virginia — Rex Hunt (June 26): Observed a few adults and cast skins early in June in the Brushland near my home in Clarendon.

Ohio — R. S. McKay (May 30): These insects are very numerous, covering a small area in Batavia and Stonelick Townships in Clermont County. Adults were first noticed May 27.

T. H. Parks (June 23): Locusts have appeared in the southern counties in swarms larger than expected. Lawrence County has the most. Swarms are reported to date from Gallia, Scioto, Pike, Ross, Adams, Brown, Clermont, and Hamilton Counties. The survey is not yet complete.

Tennessee — G. M. Bentley (June 13): Brood XIV is occurring as scheduled. In some sections we are having reports of serious injury being done to peaches and apples.

Lee M. Hutchins (June 15): Heavy injury has been reported from locusts on newly cleared ground at Kingston, particularly on trees in their second and third year in the orchard; the shoots 1/4 to 1/2 inch in diameter are partially or completely broken off.

Indiana — J. J. Davis (June 13): The locust is reported as abundant in a grove four or five miles north of La Fayette on June 13. Infestation is not yet confirmed. (June 15): Investigated today. Evidence of presence but no locusts found. A farmer reports that they were not extremely abundant.

BROOD XXII (THIRTEEN-YEAR RACE)

Mississippi — Geo. H. Kent (May 26): The 1923 brood of the periodical cicada appeared in Franklin County in large numbers about the earlier part of May. I have taken notes on this insect for 52 years past as follows: 1871, 1884, 1897, 1910 and now in 1923. Stragglers will appear again in 1924 as they have in 1872, 1885, 1898, and 1911, and have formed, eventually, a new brood of some considerable scientific value and importance.

R. W. Harned (June 7): We have now received specimens of the periodical cicada or 13-year locust, belonging to Brood XXII, from each of the counties where it had previously been reported, that is, Adams, Amite, Claiborne, Franklin, Jefferson, and Wilkinson Counties. Besides that we have received specimens from three other counties, Warren, Hinds, and Utica.

Louisiana — T. H. Jones (June 14): The first 1923 adults of this brood of which we have record were taken on May 8 at a point in Livingston Parish directly across the Amite River from Magnolia (East Baton Rouge Parish). Later on during May and early June colonies were noted a few miles to the north and east of Baton Rouge (East Baton Rouge Parish). Prof. O. W. Rosewall of the Louisiana State University has specimens as follows: Deerford (E. Baton Rouge Parish); Hope Villa (Ascension Parish); Jackson (E. Feliciana Parish). I also have a verbal report, without specimens, of the appearance of the species at St. Francisville

(West Feliciana Parish). In connection with the appearance of the cicada near Baton Rouge, we have heard it reported that the insect appears every seven years and that blackberry fruits are poisonous when it appears because the cicadas lay their eggs in the fruit.

GIPSY MOTH (Porthetria dispar L.)

Massachusetts A. I. Bourne (June 23): The gipsy moth is not proving as abundant as usual, and its egg masses in the vicinity of East Wareham have apparently been very heavily parasitized. Owing to heavy rains about the 15th or 16th, Mr. Farrar states that he has seen scarcely one of the gipsy moth this season, indicating that the infestation is very light indeed. Mr. A. R. Jenks of West Acton, in Middlesex County, reports in his region that gipsy moth work is almost negligible.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

Massachusetts A. I. Bourne (June 23): A. R. Jenks of West Acton, in Middlesex County, reports the brown-tail moth work almost negligible. Mr. Farrar states that he has seen scarcely a brown-tail caterpillar this season, owing to heavy rains about the 15th or 16th, indicating that the infestation is very light indeed.

CANKERWORMS (Alsophila pometaria Harr. and Paleacrita vernata Peck.)

New Jersey H. B. Weiss (June 1): Considerable damage has been done to forest trees at Morristown.

Iowa Fred D. Butcher (June 1): Cankerworms are stripping elms and unsprayed apple orchards in different parts of Louisa County.

Wisconsin S. B. Fracker (June 15): Cankerworms are less injurious to elm than in 1921 and 1922 in southeastern counties; they are worse from Madison to Spring Green.

FOREST TENT CATERPILLAR (Malacosoma disstria Huebn.)

Massachusetts A. I. Bourne (June 23): From southern Worcester County a report was received that to some extent the forest tent caterpillars were much more abundant than last season and, in fact, thicker than for many years all through the section of Framingham.

Connecticut J. A. Manter (June 22): The tent caterpillar is now in the pupa stage and is on the increase at Mansfield.

New York L. J. W. Jones (June 15): This insect is attacking maples at Bainbridge. It is probably increasing. The damage cannot be computed but apparently is slight here. A few wasplike parasites of various species are present.

New Jersey H. B. Weiss (June 1): Larvae are more plentiful than usual in Watching Mountains outside of Somerville and Bound Brook, with no serious injury.

Minnesota — A. G. Ruggles (June 7): This insect is at work in the wooded areas north and west of the Twin Cities. It does not seem to be doing quite the damage that it did last year, owing I suspect to the increased number of parasites.

North Dakota — R. L. Webster (June 5): First report from Kenmare in the northwestern part of the State.

Oregon — Washington News (June 11): Nature is coming to the aid of western Oregon, whose caterpillar invasion science could not halt. Parasitic flies are laying eggs in the caterpillar fur. The eggs hatch and the parasites gnaw. The caterpillar squirms, staggers, curls up, and dies. Millions of dead worms are in the outskirts of Corvallis and on the road to the Yaquina Valley, whence they came. In a few days all will be dead and a good rain will revegetate the country, which they stripped of greenery.

A. L. Lovett (June 15): Worms reported stopping trains are tent caterpillars, which are mostly gone.

SPANWORM (Ennomus subsignarius Huebn.)

New York — G. E. Smith (June 9): The caterpillars are very abundant and have partly defoliated entire woods at the present time in Orleans County.

Indiana — J. J. Davis (June 15): Snow-white linden moth larvae are defoliating a 10-acre patch of hardwood trees, including oak, maple, chestnut, and hickory, at Forest, near Frankfort, on June 12. (June 16): A correspondent writes that he has 50 acres of valuable timber which these caterpillars are "literally eating up" at Russellville. The walnut, ash, and hickory are especial favorites.

MARCH FLIES (Bibio albipennis Say)

Maine — E. M. Patch (June 10): A. L. Merrill reports that millions of these little pests are on his trees at Auburn.

A NOCTUID (Ania limbata Haw.)

New York — W. T. M. Forbes (June 1): Caterpillars have been sent in from Highland Mills and are reported as being rather injurious on horse chestnuts the past few seasons.

ARBORVITAE

ARBORVITAE LEAF-MINER (Argyresthia thuiella Pack.)

Maine — E. M. Patch (June 23): This insect is causing considerable consternation at a nursery and to landscape gardeners at Bar Harbor.

WOOLLY ELM APHID (Eriosoma americanum Riley)

New York — E. P. Felt (June 22): This aphid is very bad on elm at Steventown.

G. M. Codding (June 20): The woolly elm aphid is doing more damage to elm than last year at Westchester.

SPINY ELM CATERPILLAR (Euvanessa antiopa L.)

New York — G. M. Codding (June 20): More of these caterpillars are reported than for several years in Westchester County.

New Jersey — H. B. Weiss (June 16): The spiny elm caterpillar is more prevalent than usual in the northern half of the State on elms and poplars. No unusual or severe damage has been noted. Larvae are almost full-grown.

ELM SCALE (Gossyparia spuria Modeer)

New York — C. R. Crosby (June 4): Infested elm leaves have been received from Rochester.

Idaho — Don B. Whelan (May 28): A specimen of twigs mailed to this office from Twin Falls was badly incrusted.

HICKORY

HICKORY BARK-BEETLE (Scolytus quadrispinosus Say)

Indiana — J. J. Davis (June 15): We continue to receive reports of damage to hickories by this beetle from various parts of the State.

MAY BEETLE (Lachnosterna spp.)

Indiana — J. J. Davis (June 15): May beetles were reported defoliating hickory at Connersville on June 11.

LOCUST

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New Mexico — W. E. Emery (May 28): This insect is doing quite a bit of damage to the locust tree in Dona Ana County.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

New York — E. P. Felt and M. D. Leonard (June 21): The cottony maple scale is reported as quite generally distributed on soft maple in Orange County at present and abundant.

Virginia — L. A. Stearns (June 21): This scale is more common than usual on soft maple and numerous inquiries are being received from Leesburg concerning it.

Indiana J. J. Davis (June 15): Cottony masses are now becoming conspicuous so that they are noticeable to the casual observer. Reports are coming in. We expect trouble similar to that in 1922.

SILVER MAPLE LEAF-MITE (Phyllocoptes quadripes Shim.)

New York M. D. Leonard (June 20): Reported appearance objectionable on shade trees at Kenwood.

ALDER BLIGHT (Prociphilus tessellatus Fitch)

North Carolina F. Sherman (June 8): Recently somewhat of an epidemic of wooly maple aphid has occurred in several counties in the central part of the State — Rockingham, Granville, and Forsyth.

OAK

OAK LEAF-ROLLER (Tortrix quercifoliana Fitch?)

Connecticut F. A. Bartlett (June 23): The oak leaf-roller is attacking pin oaks in Stamford vicinity. Some trees entirely defoliated were sending out new shoots.

PINE

PINE-LEAF SCALE (Chionaspis pinifoliae Fitch)

Massachusetts A. I. Bourne (June 23): The young of this scale began to hatch and appear on the leaves the 20th to the 22d of May.

Nebraska M. H. Swenk (June 15): Reports of injury by this insect continued to be received during late May and early June.

A SCALE INSECT (Toumeyella pini King)

Nebraska M. H. Swenk (June 15): A new center of infestation by this insect was located in southern Dodge County, the only previous locality in the State where it is known to occur being in northeastern Saline County.

SPRUCE

SPRUCE BUDWORM (Harmologa fumiferana Clem.)

Michigan R. H. Pettit (May 23): Spruce budworm on spruce was sent in from Fosters. Miss McDaniel reports the emergence of adult moths this morning. This emergence, no doubt, is hastened by the fact that they were kept in the insectary from the 10th inst. until the present time.

WILLOW

IMPORTED POPLAR AND WILLOW BEETLE (Plagiodera versicolora Laich.)

New York — G. M. Codding (June 21): I have seen trees in various parts of Westchester County nearly defoliated by this beetle.

Connecticut and New York — F. A. Bartlett (June 23): This beetle seems to be a very serious pest on willow and poplar in Fairfield and Westchester Counties. It is increasing.

INSECTS ATTACKING GREENHOUSE AND ORNAMENTAL PLANTS

ROSE

ROSE MIDGE (Dasyneura rhodophaga Coq.)

Indiana — J. J. Davis (June 15): This is reported as a serious pest in greenhouses at Evansville.

ROSE LEAFHOPPER (Typhlocyba rosae L.)

New York — M. D. Leonard (June 5): This pest is common and doing considerable injury to foliage on a number of bushes in the town of Slingerlands (Albany County). It is present in all stages. (June 15): Report has been received from Salamanca. Most bushes in town are affected unless sprayed.

ROSE LEAF-BEETLE (Nodonota puncticollis Say)

Pennsylvania — T. L. Guyton (June 14): This pest is reported as rather numerous at Harrisburg.

ROSE CURCULIO (Rhynchites bicolor Fab.)

North Dakota — R. L. Webster (June 20): Reports from widely scattered points in the State indicate the usual amount of damage by this insect to cultivated roses.

SOWBUGS (Crustacea)

Indiana — J. J. Davis (June 15): On June 9 sowbugs were reported as injuring rose roots at Washington. On June 5 they were reported as injuring young bean and pea plants at Madison.

MISCELLANEOUS

SAY'S BLISTER-BEETLE (Pomphopoea sayi Lec.)

New York — P. J. Chapman (June 9): This pest appeared in large numbers on apple hawthorn at LeRoy.

C. B. Raymond (June 21): This beetle is doing considerable damage in one community in Allegany County and beetles are present in numbers.

IRIS BORER (Macronoctua onusta Grote)

New York C. R. Crosby (June 20): Severe injury is reported to iris at Schenectady.

PALMETTO LEAF-MINER (Homaledra sabalella Chamb.)

Louisiana T. H. Jones (June 11): The county agent from Hammond sent in leaves injured by larvae, as well as larvae, pupae, and adults, with the statement that the larvae were "doing considerable damage" to the leaves of large Phoenix palms in a yard at this place.

(Aphidae)

Georgia W. F. Turner (June 23): There is an aphid on crepe myrtle that is extremely serious this year. I do not recognize the species. It is very abundant at Fort Valley.

SPINDLEWORM (Achatodes zeae L.)

Maine E. M. Patch (June 16): This is a "new pest" at Auburn, attacking "Golden elder" — Sambucus nigra aurea. Larvae are about full-fed.

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

New York M. D. Leonard (June 8): Grubs are seriously injuring the growth of many nursery trees at Westbury, L. I., and attacking yew trees, Taxus cuspidata. There are more than ever before. Grubs, pupae, and recently emerged beetles have been sent to this office.

H. C. Huckett (June 14): This weevil is injurious to Taxus in nurseries in Suffolk County.

New Jersey H. B. Weiss (May 25): Larvae are doing considerable damage to Taxus roots in a nursery at Paterson.

INSECTS AFFECTING MAN AND DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicidae)

Massachusetts A. I. Bourne (June 23): Mosquitoes at East Wareham are very slow in becoming abundant this season, owing doubtless to the unusually dry weather prevailing throughout most of May.

Georgia — Oliver I. Snapp (June 20): Mosquitoes are unusually abundant in middle Georgia this year. The exceedingly rainy May facilitated materially the development of this troublesome pest.

A DEERFLY (Chrysops carbonarius Walk.)

New York — M. D. Leonard (May 25): This insect is scarce, only one specimen having been taken in each place in locations where there should have been quite a few had they been at all numerous.

Maryland — J. A. Hyslop (June 22): Chrysops vittatus Wied. is more numerous in southern Montgomery County that it has been in the past five years.

FLEAS (Siphonaptera)

Indiana — J. J. Davis (June 15): Reports of fleas in barns and dwellings are coming in. The last few years we have had more than the usual amount of trouble from fleas.

HUMAN FLEA (Pulex irritans L.)

Ohio — T. H. Parks (June 23): This species was received from a correspondent who reports the home overrun with them.

STRAW-ITCH MITE (Pediculoides ventricosus Newport)

Virginia — L. A. Stearns (June 21): After 1922 wheat hauled from Montgomery County, Md., to Leesburg, Va., for milling had been run through the fan, employees complained of serious skin eruptions. The lesions were small, thickly placed over the back to the waistline and scattered over arms. Medical attendance was necessary. Customers at the mill complain of itching and slight eruption. Insect hosts of the mite as affecting wheat were rather more common than usual in this region in 1922.

CATTLE

HOUSEFLIES (Musca domestica L.)

Louisiana — T. H. Jones (June 15): The common housefly is reported to be unusually abundant about dairy barns in various parts of the State.

SCREWWORM (Chrysomya macellaria Fab.)

New York — R. M. Wells (June 19): The earliest appearance this year at Orange County of screwworm was reported this date.

Texas — D. C. Parman (June 21): Flies are few in number for June. A slight increase of "worms" myiasis is noted in livestock. There are fewer cases in the plateau region.

HORNFLY (Haematobia irritans L.)

Louisiana — T. H. Jones (May 25): The hornfly appears to be unusually abundant this year; they have been abundant at the L. S. U. Dairy Farm during late May and early June, and were reported as very abundant at a dairy at Zachary on June 8. They were noted as very abundant on cattle being driven over the roads of East Baton Rouge Parish on June 8, and C. H. Staples, Professor of Dairying at L. S. U., states that they are unusually abundant at dairies he has visited in the State. W. G. Bradley, Assistant Entomologist of the Experiment Station, reports having found the hornfly very abundant while on a trip to Cameron Parish, they being as numerous on horses as they ordinarily are on cattle.

POULTRY

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Pennsylvania — Norman Bailey (June 13): The rose chafer is reported as "eating all fruits, blossoms, shrubbery, and roses," and chickens and turkeys are eating so many of them that they are killing the poultry.

Indiana — J. J. Davis (June 15): Rose beetles are causing the death of large numbers of young chicks in southern Indiana. Definite reports have been received from Williams in Lawrence County and from Corydon. In some cases they were killing 12 a day, all chicks fatally affected being 6 weeks old or younger.

CHICKEN MITE (Dermanyssus gallinae Redi.)

Texas — O. G. Babcock (June 20): The chicken mite has been very bad during June in practically all poultry houses where treatment was neglected. Baby chicks were killed and hens driven from nests.

MITES

Indiana — J. J. Davis (June 15): On June 11, head lice, feather and depluming mites of poultry have occasioned a number of inquiries from various parts of the State.

INSECTS INFESTING HOUSES AND PREMISES

ANTS (Formicidae)

Mississippi — M. R. Smith (June 22): T. F. McGehee recently sent to this office a number of specimens of the tiny thief ant, Solenopsis molesta Say, which he states were present in a box among crackers. This species is occasionally found in houses in Mississippi, but it is never as numerous or troublesome as Pharaoh's ant, which it to some extent resembles.

M. R. Smith (June 22): Tapinoma sessile Say has been reported by T. F. McGehee to be unusually numerous and troublesome in the kitchen of a house at Holly Springs. This is the first report we have of this species invading houses.

Indiana J. J. Davis (June 15): Ants, particularly ants in lawns and gardens, have been unusually troublesome the past month.

ARGENTINE ANT (Iridomyrmex humilis Mayr.)

Alabama Neale F. Howard (June 11): The Argentine ant is causing considerable annoyance in the city of Birmingham, and many inquiries are made of the Bureau laboratory for control measures.

California W. D. Pierce (May 31): The Argentine ant is very bad around the entire Bay region, especially at Oakland, Alameda, San Francisco, San Mateo, and Palo Alto.

ROUNDHEADED BORERS (Phymatodes testaceus L. and P. variabilis L.)

New York M. D. Leonard (May 24): Specimens have been received in the office with the statement that they were present in several houses and causing annoyance because of their numbers. (They probably come from an oak wood pile nearby).

BOOK-LICE (Atropos divinatoria Muell.)

Texas O. G. Babcock (May 9): A five-pound lard bucket that was washed last fall and contained about a pound of hominy flakes was found to be heavily infested with book-lice. It was noticed that these insects were among the hominy and not upon the lid where there was the trace of lard. This is the first case of the kind noticed during the three years at Sonora.

TERMITES (Reticulitermes flavipes Kol.)

Illinois W. P. Flint (May 18): Termites have been very abundant in Illinois this season, and many reports of damage to buildings, both in the country and in town, are being received.

POWDER-POST BEETLES (Lyctus linearis Goeze)

Indiana J. J. Davis (June 15): Powder-post beetles (Lyctus striatus Melsh. Stirrett det.) have been reported attacking woodwork in several dwellings at Decatur.

NAKED SLUGS (Agriolimax sp.)

Indiana J. J. Davis (June 15): Naked slugs have been reported as annoying in the cellar of a house in La Fayette. Last year these slugs were very annoying in La Fayette.

STORED-PRODUCT INSECTS

STORED GRAIN PESTS

Nebraska — M. H. Swenk (June 15): During the second week in June renewed inquiry concerning injuries by stored grain pests in wheat began to be received. The number of these reports is quite normal, however, as it has been for the past several months.

BEAN WEEVIL (Mylabris obtectus Say)

Pennsylvania — C. R. Crosby (May 28): Lima beans are seriously injured; specimens have been received from Warren.

PEA WEEVIL (Bruchus pisorum L.)

New York — P. J. Chapman (June 15): The pea weevil is common in seed peas, 25 per cent in some at Genesee County.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

Idaho — Claude Wakeland (May 26): This beetle was reported as very numerous in an old building containing grain, at McCammon.

LARDER BEETLE (Dermestes lardarius L.)

New York — C. R. Crosby (May 22): Smoked meat is badly infested at Amenia.