THE INSECT PEST SURVEY BULLETIN

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

In this number of the Insect Pest Survey Bulletin statistics on the summer Hessian fly surveys of New York State and Ohio are reviewed. The situation is reported as generally favorable in the Ohio River Valley, while the infestation in New York State is over 7 per cent higher than last year. In North Dakota very heavy infestations were observed throughout Golden Valley County, while in Nebraska this insect is present in the stubble in below normal numbers.

The chinch bug situation in Ohio is very favorable, the pest being very much less numerous than last year. Serious local damage occurred in southern, central, and north-central Illinois, and a very serious movement of the chinch bug was observed late in July in southeastern South Dakota, while both southeastern and northeastern portions of Nebraska are experiencing rather heavy chinch bug damage.

The corn earworm, though not as serious as in 1921, is generally prevalent over the eastern States. In the Ohio River Basin, especially in southern Illinois and Indiana this pest has done quite serious damage to tomatoes, while in Georgia this pest is doing even more damage to cotton than the boll weevil in some of the northern counties.

The stalk borer is unusually prevalent throughout New England,the Ohio River Basin, and the Upper Mississippi Valley, damaging a great variety of plants, particularly corn and herbaceous flowers, dahlias and zinnias being most seriously damaged.

The garden webworm continued throughout August to be a serious pest to alfalfa in the Mississippi River Valley from Nebraska southward to Texas.

Midsummer reports on the cotton boll weevil are reviewed in this number of the Bulletin. About 30 per cent of the total number of reports received from the cotton belt indicate heavy damage by this pest.

The cotton leafworm appeared about two weeks earlier than usual throughout the northern part of the cotton zone, while on the other hand the cotton crop was about 10 days late in its development. Owing to these conditions rather serious injury by the puncturing of the bolls is reported from the greater part of the upper cotton zone.

The apple and thorn skeletonizer is appearing in a most unusual epidemic throughout New England and southward to New York and New Jersey. In New England it is reported as having skeletonized fruit trees to such an extent that the damage is easily observable in passing along the railroads or highways. It is reported about the middle of August for the first time time in northern New Jersey.

The fall webworm is also occurring in unusual abundance throughout New England and the Ohio River Valley.

The European red spider is now seriously abundant throughout New England, southward to Maryland, and West Virginia, and westward to Ohio.

The Mexican bean beetle is reported from Adams, Highland, Pike and Scioto Counties in Ohio and is substantially spreading in the previously infested States.

The bagworm is generally serious throughout the Middle Atlantic, southeastern and Ohio River States, damage extending westward to Missouri.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1923.

Aphids generally are unusually numerous this year on all kinds of vegetation in Nova Scotia, and much apprehension is being shown on the part of orchardists and growers with regard to the numbers of several species of economic importance. The green apple aphid is more numerous in the Annapolis Valley than it has been since 1913. The rosy aphid is likewise very numerous. The potato aphid and the turnip aphid are very abundant, but a fungous disease induced by warm, cloudy weather during the first two weeks of August checked their numbers to a very considerable extent.

The red spider has seldom, if ever, been more injurious to small fruits than it has been this year in the Niagara district of Ontario. Black currants and raspberries are suffering particularly, the foliage turning brown, becoming scorched, and the fruit crop in many instances being almost a complete failure.

The rose leafhopper, which occurred in outbreak form in apple orchards in eastern Ontario early this season, has been reduced to insignificant proportions through natural agencies. Parasitism has been very heavy.

The lesser migratory grasshopper continues in the ascendancy at many points in Canada. The outbreak in the southern Okanagan Valley of British Columbia is particularly severe and seems to be extending into more northerly points in the same valley. In southern Alberta and Saskatchewan the outbreak is continuing, engendered to some extent by migrations from certain points in northwestern United States. In Prince Edward Island this species has for the second year in succession caused a great deal of trouble in Kings and Queens Counties, covering an area of approximately 100 square miles.

The clover-seed chalcid is proving to be more widely distributed in southern Alberta than formerly. In some fields at least 80 per cent of the pods contain larvae.

The fall webworm appears to be numerous everywhere in southern Manitoba this year and also in the eastern townships of Quebec.

The spruce budworm is occurring abundantly in the neighborhood of Victoria, B.C. A heavy outbreak is expected from this insect next year in this locality and at other points in the coast sections.

The black walnut caterpillar has occurred in outbreak form in western and southwestern parts of Ontario. Many walnut trees throughout this area have been completely stripped of foliage.

A syrphid, close to Eumerus strigatus Fallem, has been reared from the roots of iris infested with the iris borer from Toronto, Ont. In all probability this insect is European in origin.

CEREAL AND FORAGE-CROP INSECTS

MISCELLANEOUS FEEDERS

GRASSHOPPERS (Acridiidae)

North Dakota — R. L. Webster (August 3): County agents report damage in Pierce, Mercer, and McHenry Counties.

Nebraska — M. H. Swenk (August 1-15): Grasshoppers, mostly Melanoplus bivittatus, began to be complained of in Furnas and surrounding counties early in August. There have been complaints of grasshopper injury in other parts of western and central Nebraska, but on the whole these insects are less injurious than usual this year.

Texas — M. C. Tanquary (July 23): Reports of grasshopper injury continue to come in from several counties of western Texas.

WHITE GRUBS (Phyllophaga spp.)

Massachusetts — A. I. Bourne (August 23): Numerous complaints have come to this office relative to unusual abundance of white grubs from very many points throughout the State. Franklin, from East Wareham, finds grubs "working in grass land in astonishing numbers. In one area of about two acres, they had eaten off all the roots of the grass so that the turf could be rolled back easily like a carpet, exposing the grubs in such numbers that they could have been gathered by the bushel." Complaints of these insects practically killing large areas in lawns have been received from several of our correspondents. One writes: "The grass in spots has died altogether, looking as if it had been burnt by the sun. Flocks of robins and other birds have been seen picking at the spots as if seeking grubs or worms. The layer of turf is loose from the layer of earth just beneath it. Running the hand between the turf and the earth will separate the turf as readily as if one ran the hand between two sheets".

Iowa — F. A. Fenton (July 28): The June beetle, as predicted, has appeared in swarms in southeastern Iowa in the counties bordering the Mississippi, where they have defoliated large tracts of woodlands.

WIREWORMS (Elateridae)

Massachusetts — A. I. Bourne (July 25): Wireworms are occasionally causing considerable injury, although there is no general or widespread outbreak. Doubtless the injury is somewhat aggravated in most fields by the protracted drought, which has weakened the plants so that they have not been able to revive after early injuries by these insects.

WHEAT

HESSIAN FLY (*Phytophaga destructor* Say)

New York

C. R. Crosby: Owing to unpreventable conditions, it was necessary to restrict the Hessian fly survey this year to eight counties in the western part of the State. These indicate that the average infestation for this region was 8.5 per cent compared with an infestation in 1922 of 1.2 per cent (see Vol. 2, page 195) and 5.2 per cent in 1921 (see Vol. 1, page 182). The infestation, by counties, is as follows:

Genesee	-	5.33	Wayne	-	18.35
Wyoming	-	1.60	Ontario	-	21.89
Monroe	-	7.74	Chautauqua	-	0.00
Livingston	-	2.40	Yates	-	10.67

Ohio

H. A. Gossard (July 25): The annual wheat survey was carried into 298 wheat fields, distributed over 32 counties. Hessian fly was found to be well under control in all counties except in a few in northeastern Ohio, where considerable early seeding was made last year. There is a distinct increase in infestation in Ashland, Lorain, Summit, Portage, Columbiana, and Wayne Counties. In the northwestern counties, where the county agents carried on an educational campaign, the infestation has been reduced to a very low figure by observing the proper seeding dates. Henry County reduced its infestation from 40 per cent in 1922 to 2 per cent in 1923, Sandusky County from 52 per cent to 7 per cent, and Putnam County from 39 per cent to 5 per cent. Wood County in this northwestern section had one field sowed too early, with 94 per cent of the straws infested and most of them lodged. Fulton County had one field sowed September 7, with 82 per cent of the straws infested, and another seeded too early had 46 per cent infestation. The reduction over northwestern Ohio, therefore, was due to observing the proper seeding dates and not to parasitism or natural factors. The State average of Hessian fly infestation is 4.4 per cent, compared with 10.9 per cent in 1922.

North Dakota

C. N. Ainslie (July 27): Every field in Golden Valley County examined was heavily infested in June just as wheat was jointing, and a brood of flies has since attacked the grain again. The limit of attack is unknown at present.

Nebraska

M. H. Swenk (August 1): The Hessian fly is now present in the wheat stubble in supernormal numbers. During July the infestation was traced in the Platte Valley west to Dawson County, it being present, in fact, in Furnas, Gosper, and Dawson Counties in greater numbers, on the whole, than in the counties intervening between them and the principal area of heavy infestation, which includes Cass, Otoe, Nemaha, Richardson, Johnson, and Pawnee Counties.

WHEAT-SHEATH GALL JOINTWORM (Harmolita vaginicola Doane)

Ohio — H. A. Gossard (July 25): The wheat-sheath worm is considerably more numerous in eastern Ohio and will reach from 5 to 10 per cent in some fields that were seeded quite late.

WHEAT-HEAD ARMYWORM (Heliophila albilinea Hubn.)

Iowa — C. J. Drake (July 27): The wheat-head armyworm has appeared in considerable numbers in timothy fields near Ainsworth. In one field the timothy heads were practically all destroyed by this insect.

WESTERN WHEAT SAWFLY (Cephus cinctus Nort.)

North Dakota — R. L. Webster (August 3): The Burke County agent reports that infestation running as high as 80 per cent has been found in this county. (August 13): Severe damage was reported from Burke, Ward, Bottineau, and Towner Counties.

GREAT PLAINS FALSE WIREWORM (Eleodes opaca Say)

Nebraska — M. H. Swenk (August 1): The beetles of this wireworm have not appeared in as large numbers as were expected from the amount of serious injury done to the winter wheat in the southwestern part of the State last fall and spring. This indicates a probable reduction in the amount of injury that will be done to the wheat crop to be seeded this fall in that part of the State.

Texas — M. C. Tanquary (July 23): A correspondent from Carson County reported in early June that he had had 300 acres of wheat destroyed by this insect.

ENGLISH GRAIN APHID (Macrosiphum granarium Kby.)

Nebraska — M. H. Swenk (August 1): Following the unusual abundance of the English grain aphid on wheat in southeastern Nebraska from June 18 to about the first of July, a local outbreak of the same insect occurred in the western part, in Cheyenne County, about the middle of July, but it was not nearly so extended or intense as was the earlier infestation in the southeastern part of the State.

CORN

CHINCH BUG (Blissus leucopterus Say)

Ohio — H. A. Gossard (July 25): Chinch bugs were found to be present in rather limited numbers, being greatly reduced below their numbers one year ago. We have had very few inquiries about them, and while they could be found in limited numbers in most of the western and northern counties during the wheat survey, they were not sufficiently numerous to threaten corn anywhere.

Indiana — J. J. Davis (August 22): Eggs of the chinch bug were abundant at Monticello on August 7. Very few eggs of the second generation had hatched at that time. This is representative of the central section of this State.

Illinois — W. P. Flint (July 26): Rains caused a great variation in the number of chinch bugs throughout the State. Serious local damage was done in southern, central, and north-central Illinois. In many cases from 1 to 10 acres of corn adjoining wheat was killed at harvest time where no barriers were used. At the present time indications are that the second brood will be very abundant.

Iowa — F. D. Butcher (July 24): One farmer in Page County reported seeing a few chinch bugs in his oat field.

F. A. Fenton (July 28): The chinch bug is present in injurious numbers in the southeastern part of the State. The present distribution of this pest is greater than that of last year, showing that it is on the increase in this State.

Missouri — F. D. Butcher (July 24): The county agent at Maryville reports that chinch bugs are injuring corn about 7 miles south of the Iowa line.

A. C. Burrill (August 25): Chinch bugs have been reported as serious from the following counties: Andrew, Buchanan, Caldwell, Clay, Davies, DeKalb, Gentry, Ray, Adair, Chariton, Macon, Livingston, Pike, Ralls, Bates, Boone, Maries, Miller, Morgan, and Lincoln.

South Dakota — C. N. Ainslie (July 27): The bugs are moving by the millions into corn during July in Charles Mix County, and although the farmers are doing much to check them, much damage will doubtless be done. They were reported as far north as Mitchell and also from Gregory County. A number of adjacent counties are infested.

Nebraska — M. H. Swenk (August 1): The chinch bug has been destructively abundant during July in three separated areas of the State. One of these areas, in the southeastern part of the State, includes Richardson, Pawnee, Gage, and eastern Jefferson Counties, and extends northward into southern Nemaha and southern Lancaster Counties. The centers of injury in this area are around Humboldt, Auburn, Table Rock, Pawnee City, Wymore, Adams, and Firth. There is also some local injury in Saline County. A second area lies in south-central Nebraska and includes Franklin and Harlan Counties, around Riverton, Alma, and Huntley, with some local injury in Gosper County. The third area is in the northeastern part and includes eastern Keyapaha, all of Boyd, northeastern Holt, and western Knox Counties. The bugs began leaving the small grain for the corn in the first area about July 4, a few days later in the second area, and about July 12 in the third area. The migration had practically ended in the first two areas by July 25, but was still in progress in the third area at the end of the month. On the whole, the chinch bug has done more injury to corn in Nebraska this month than at any time since the summer of 1910. Weather conditions continue favorable

for these pests, and if their present numbers are augmented normally by the second generation during August, very menacing numbers of chinch bugs will go into hibernation in these infested areas this fall. (August 1-15): The chinch bug continued to do injury to corn in the second area of infestation during the first week in August in diminished intensity, extending west into Furnas and north into Dawson Counties. By August 10 the second brood developing in the corn was under way.

CORN EARWORM (Heliothis obsoleta Fab.)

Maine — E. M. Patch (August 1): The county agent from Freedom writes: "This pest has quite a foothold in this town."

New York — C. R. Crosby (July 18): A correspondent from Middletown says: "This grub is raising h___ with my corn."

West Virginia — W. E. Rumsey (August 15): Early sweet corn at Morgantown shows at least 10 per cent of the ears attacked.

Ohio — H. A. Gossard (August 20): We had an inquiry from Cleveland July 26 for control measures for this pest, also from Brunswick August 1, and from Lakewood August 15. This insect is injurious this season over southern Ohio, though not so damaging as it was in the summer of 1921.

New Mexico — W. E. Emery (August 1): This insect in Dona Ana County is very abundant and is doing considerable damage to the ear corn. In the northern part of the county where corn is tasseling about 20 per cent of the tassels have been destroyed.

STALK BORER (Papaipema nitela Guen.)

Maine — E. M. Patch (July 21): A report from South Portland says: "Ten per cent or more of my tomato plants are riddled by them. Lately I found them working in the potato tops." (July 30): I found about 50 in potatoes and some in sweet corn. (July 31): A report has been received from North Haven. (August 2): A report has been received from Richmond.

Massachusetts — A. I. Bourne (August 23): The potato or corn stalk borer is practically through its work for the present season. The larvae are nearly mature and beginning to leave the plant. This insect has apparently been unusually abundant this year. Many more complaints have been received than normally from all sections of the State. As I may possibly have stated before, this may be in some measure due to the fact that interest is awakened in all borers in corn from the publicity given the European species, but from our personal observation this species was much more abundant this year than normally.

Rhode Island — A. E. Stene (August 18): Another insect that is rather common this year is the common stalk borer. We are getting specimens of this almost every day with the inquiry as to whether it is the European corn borer. It is apparently fairly abundant and attacks of it are recorded on corn, potatoes, and peppers.

Connecticut — A. G. Davis (July 19): A report has been received from Torrington of this insect attacking field and sweet corn. It is usually not noticed. The crop is damaged to the extent of 1 per cent.

W. E. Britton (August 21): This insect has been reported from Waterbury, Somers, Hamden, and Stratford as attacking corn, tomato, and pepper. It is rather more abundant than in an average year.

Ohio — H. A. Gossard (July 25): The common stalk borer was received from all over the State.

Indiana — J. J. Davis (August 22): Most of the reports received the last month are of nearly mature larvae in large corn stalks, where they are doing little damage.

Illinois — W. P. Flint (July 26): The common corn stalk borer has been sent in from many localities from small grain, corn, and ornamental plants.

Iowa — F. A. Fenton (July 28): The stalk borer has caused more damage to various plants this year than it has for the past five years. Several corn fields have been ruined, and in others the pest has been present in the outer rows. It is also reported in oats and such ornamental plants as cosmos and dahlia, and also has done some injury to tomatoes.

Missouri — L. Haseman (July): This pest was very abundant and destructive a little earlier, and many complaints about it were answered.

Nebraska — M. H. Swenk (August 1): During the second week in July there was some injury to small grains and corn by the common stalk borer. The amount of damage done by this insect was not very great, however.

ARMYWORM (Cirphis unipuncta Haw.)

Nebraska — M. H. Swenk (August 1-15): During the first week in August the true armyworm appeared in Holt and Scottsbluff Counties, doing considerable local damage in late oat fields. The armyworm outbreak, however, was not at all general.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

California — California Weekly News Letter, Vol. 5, No. 15 (July 28): An investigation conducted by the State Department of Agriculture has revealed the fact that the alfalfa weevil exists in one field

in Sierra County adjoining the Nevada State line. The infestation is the result of the natural spread of the weevil from the alfalfa fields in the vicinity of Verdi, Nev. Fortunately, the alfalfa weevil still remains on the east side of the Sierra Nevadas, and the same natural barriers which acted as a measure of protection when the weevil was confined to Nevada are effective, even in the face of the infestation in Sierra County.

California Weekly News Letter, Vol. 5, No. 16 (August 11): In 10 days at inspection stations on the California-Nevada line, maintained by the California Department of Agriculture, there were taken from 12 automobiles 126 live alfalfa weevils.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Florida

F. S. Chamberlin (August 10): Report of injury to young corn has been received from Quincy. The crop was badly damaged.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa

C. J. Drake (July 27): The garden webworm has appeared in considerable numbers during the past week. At Melbourne and Woodbine it has been reported as destroying fields of alfalfa. At Knoxville and Woodbine some patches of sweet corn and parts of corn fields have been severely injured. Most of the caterpillars are rather large and almost mature at this time.

Since writing the above, a letter from Audubon, dated July 26, states that the garden webworm practically destroyed a 40-acre field of alfalfa in less than a week. I have just received another letter from the county agent of Pottawattamie County, stating that a large portion of the second crop of alfalfa in that county has been destroyed.

Nebraska

M. H. Swenk (August 1): During the two weeks from July 13 to July 26 many fields of alfalfa in eastern Nebraska were badly damaged by this pest. The worms, as usual, spun the tops of the plants with webbing and ate the leaves. The injury was confined to the part of the State lying east of the 99th meridian, and seemed to be quite general over this area. Reports of injury were especially common from Richardson, Pawnee, Gage, Jefferson, Thayer, Buffalo, Merrick, Platte, Sarpy, Douglas, Washington, Burt, and Dakota Counties. Only the second crop of hay was affected, especially those fields that were not cut until about the first of July. (August 1-15): Injury in alfalfa by the second brood of the garden webworm continued with reduced intensity during the first 10 days of August. Before the last of the reports of injury of the second brood were received from northern Nebraska, great swarms of moths had appeared in southern Nebraska, and are still flying at the present writing, indicating the probability of continued injury by the third brood of the webworm late in August and early in September.

Kansas, Oklahoma, Texas, and New Mexico — J. R. Horton (August 6): Since July 23 or somewhat earlier webworms have been relatively scarce; injury has practically ceased and the second brood of moths is on the wing. A very heavy flight of moths was noticed all the way from Reno and Sedgwick Counties, Kans., to and including northeastern New Mexico and the Oklahoma and Texas Panhandles. It looks as though alfalfa and other forage crops and truck gardens might suffer another severe attack by this insect.

Texas — M. C. Tanquary (July): During the latter part of June and the first of July there were reports of serious infestations of this insect on cotton from Lamar, Panola, and other East Texas counties.

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Massachusetts — A. I. Bourne (August 23): The European corn borer, from present indications, would seem to be having a year of practically normal abundance and about average injury, although it has been reported that the area of severe injury occurring is somewhat larger than last year, as would be expected. It is rather early, though, to make any definite prophecy relative to this second brood.

Ohio — H. A. Gossard (July 25): First and second instar larvae of the European corn borer have recently been found in Lake County. Moths had issued in the laboratory at Geneva a day or two before June 29 but had not commenced laying eggs at that time. (August 20): Most of the moths of the European corn borer brood have emerged in most of northern Ohio and at the present time eggs are found upon the corn blades and the larvae are found in the corn stalks and, under some circumstances, in weeds where corn is not available. Notwithstanding a thorough burning campaign and clean-up in Ashtabula County last spring, there is an increased number of borers this season, clearly indicating that there were more moths in this area the present season than were there last year. Since most of the corn stalks were destroyed in the clean-up, it seems possible, and perhaps probable, that a good many caterpillars are carried over the winter hidden in weeds, and a need for the prompt destruction of corn stalks as soon as the ears are removed is emphasized by this development.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

New Mexico — R. Middlebrook (July 20): The species Diatraea saccharalis and D. zeacolella have been reported from the eastern counties of the State. They are getting worse each year. The crop is damaged 30 per cent.

A STALK BORER (Diatraea lineolata Walk.)

New Mexico — J. R. Horton (August 1): Corn damage, estimated by counting 100 stalks in each field, covering most of Quay County, varies from no stalks tunneled at all in some fields to as high as 85 per hundred in others. Tunneled stalks contained from 1 to 6 borers each. This injury is all by the first summer brood of borers.

About 1 to 2 per cent of stalks of milo is damaged in some fields -- as high as 10 per cent in first two or three rows bordering infested corn, in one field.

CLOVER ROOT-BORER (Hylastinus obscurus Marsh.)

Ohio — H. A. Gossard (August 20): The clover root-borer was received from Strongsville August 6, where it had destroyed a field of clover. I also received the same insect two or three days ago from a Wayne County field, where it had reduced the crop to less than one-half.

Indiana — J. J. Davis (August 22): Injury has been reported from Connersville in Fayette County.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Ohio — T. H. Parks (August 21): This beetle was sent by the Erie County agent August 14, with the statement that the insect is working on sweet clover. He saw one sweet clover field that had been pastured pretty closely by the insect. It is unusual in Ohio for the beetles of this species to cause such damage at this time of year.

CLOVER-ROOT CURCULIO (Sitona hispidulus Fab.)

Indiana — J. J. Davis (August 22): Injury to roots of alfalfa reported from Hartford City, in Blackford County.

Illinois — W. P. Flint (July 26): Sitones (sp?) has caused serious damage to the roots of old stands of alfalfa in central Illinois.

CLOVER-SEED CATERPILLAR (Laspeyresia interstinctana Clem.)

Iowa — C. J. Drake (July 27): The clover-seed caterpillar has been reported in Washington County. It seems to be numerous in several fields.

W-MARKED CUTWORM (Noctua clandestina Harris)

Illinois — W. P. Flint (July 26): This insect has been reported from several sections in northern Illinois as destructive to sweet clover where this plant is grown for seed crop. Parasites are fairly abundant.

MISCELLANEOUS

COTTONY GRASS SCALE (Eriopeltis festucae Fonsc.)

New York — C. R. Crosby (July 16): Grass infested with this pest was received from Gravesville.

A SWEAT-BEE (Halictus virescens Fab.)

Indiana — G. M. Stirrett (July 19): This pest was reported injuring lawns in LaFayette July 8 by throwing up little mounds of earth.

ARGUS TORTOISE-BEETLE (Chelymorpha cassidea Fab.)

New York — C. R. Crosby (July 23): This insect is doing considerable damage to oats in Chautauqua County.

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

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

Massachusetts — A. I. Bourne (August 23): Green aphids have not been unusually abundant over the State as a whole this season but Mr. Cobb, of Littleton, reports that in his orchards, particularly on young trees, they have been exceptionally bad, and apparently badly checked the growth in the young orchards.

New York — G. E. Smith (August 11): Growers are still applying the later summer application for the green aphid. A few are using lime-nicotine dust. The females continue to keep the terminals infested with the young aphids.

F. H. Bond (August 4): The lice have appeared on apple in serious numbers in some orchards at Oswego.

H. W. Fitch (August 4): They are very numerous at Sodus on apple. (August 11): They are very abundant on McIntosh, Greening, and Baldwin at Sodus. A special treatment of lime-nicotine dust gave very good control in one orchard

R. G. Palmer (August 11): Green aphids are present in many orchards, and some are making special applications for their control in Monroe County.

A. L. Pierstorff (August 11): The green aphid is reinfesting the apple seedlings and they are still abundant on Spiraea vanhoutti, at Honeoye Falls.

ROSY APPLE APHID (Anuraphis roseus Baker)

Ohio — H. A. Gossard (July 25): Aphids of many species have been active and conspicuous. The rosy apple aphid attracted attention from many quarters of the State.

Indiana — H. F. Dietz (July 18): The rosy apple aphid was unusually bad this year and damaged between 15 and 25 per cent of the crop in many localities before it migrated.

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts — A. I. Bourne (July 25): So far as reports have come in from the different sections of the State, injury from the codling moth to date has been very light indeed. The emergence of the moths of the spring brood was observed to be very

irregular, owing probably to the continued cold weather prevailing during this period of the season. This has resulted in a considerable amount of "side worm" injury, which is slightly larger than is normally the case.

New York — G. E. Smith (August 11): The larvae continue to hatch. There is probably more or less of an overlapping of the broods at this time in Orleans County.

R. G. Palmer (August 11): Codling moths are causing severe injury on apples in Monroe County.

R. F. Illig (August 11): In some parts of Wayne County there has been considerable side worm injury.

F. H. Bond (August 11): The larvae have just started to emerge from the fruit in Oswego County.

H. W. Eitch (August 11): First-brood larvae continue to enter the fruit on the shore of Lake Ontario. No second-brood larvae that could be identified as such have been found at Sodus.

Indiana — B. A. Porter (August 6): Second brood larvae began leaving the fruit between August 3 and 6 at Vincennes.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Massachusetts — A. I. Bourne (August 23): Thhoughout the western part of the State, at least, the pest of outstanding importance at present is the apple and thorn skeletonizer.

Connecticut — E. H. Hollister (July 20): Reports have come from Hartford and vicinity. This is practically the first appearance. Fifty per cent of the foliage is damaged.

Chas. D. Clark (July 24): This is the second brood of this pest and it is found generally throughout Fairfield County. Many leaves contain from 3 to 6 larvae. It is more abundant than last year.

W. E. Britton (August 21): This pest is less abundant in the southwestern portion of the State but is more abundant in the eastern part.

Rhode Island — A. E. Stene (August 18): The apple and thorn skeletonizer has been sent in from Anthony and has been observed by our field men in various places in Providence and Kent Counties, from the Connecticut line to points three-fourths of the distance across the State.

New York — E. P. Felt (July 23): This pest is generally prevalent north to Sandy Lake in the Hudson River Valley, even on widely isolated apple trees in infested areas. Injury is serious north to Claverack and Ravena and probably farther north.

M. D. Leonard (August 12): Badly infested leaves were received from Roy Latham at Orient, L. I., who states that this pest is unusually bad this season. (August 13): P.M. Eastman of the New York Department of Farms and Markets at Cambridge, near Eagle Bridge, reports it abundant on the outskirts of town.

New Jersey — M. D. Leonard (August 22): On August 13 I found about 5 per cent of the foliage injured by the apple and thorn skeletonizer in a small apple orchard of about 50 trees at Pompton. This is about 8 miles northwest of Paterson. Last year these trees were under my close observation during the entire growing season and there was no evidence of the pest at that time. As far as I know this is the first record for this State.

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts — A. I. Bourne (July 25): The first eggs of the apple tent caterpillar were seen in Amherst on July 3. Since that time they have been found in considerable abundance.

New York — Clark Hutchinson (July 21): At Ogdensburg, in St. Lawrence County, most of the caterpillars seemed to be in bushes at first, but later some got into apple trees, though they do not seem to have increased in numbers large enough to do any great amount of damage. I have noticed some farmers spraying their orchards.

New Jersey — R. B. Lott (August 5): Egg masses of apple-tree tent caterpillar have been noticed throughout State. They are quite plentiful.

FALL WEBWORM (Hyphantria cunea Drury)

Massachusetts — A. I. Bourne (August 23): In Amherst and immediate region it is at least no more abundant than it was last year, if quite as much. From Middlesex County, E. R. Farrar reports that in his estimation the pest is approximately 50 per cent as abundant as last year.

Connecticut — M. P. Zappe (August 22): Infestationsooccur on ash, cherry, apple, etc., in Hartford, Windham, and New London Counties. The webworms are more plentiful than they were last month.

New York — Roy Latham (August 6): This species is bad this season. It is on apple, maple, elm, cherry, and other cultivated trees at Orient, Suffolk County.

H. L. McIntyre (August 8): A bad infestation has been reported on a number of willows at Baker's Mills, In Warren County.

R. F. Illig (August 11): The fall webworm is abundant in several localities in Wayne County.

Ohio — E. W. Mendenhall (August 22): We find them bad in old neglected orchards and in a variety of nut and shade trees in southwestern Ohio. They are noticeable along roadsides.

Indiana — H. F. Dietz (July 18): The fall webworm is unusually abundant in cities and towns, feeding on shade trees and ornamental shrubbery. In the rural districts it does not seem to be quite as abundant as in cities and towns.

J. J. Davis (August 22): This pest is abundant wherever I have been in the southern half of the State. It is abundant in cities and along roadsides, also in orchards which have not been properly sprayed.

Nebraska — M. H. Swenk (August 1): The first brood of the fall webworm was less numerous and destructive than it has been during the last few years.

TARNISHED PLANT-BUG (Lygus pratensis L.)

Connecticut — M. P. Zappe (August 1): This pest is causing serious injury to apple and peach stock in nurseries, and is also working on the tips of dahlias, at Durham, Willimantic, and Hamden. It seems to be doing more injury than in the average year.

New York — A. L. Pierstorff (August 11): At Honeoye Falls this pest is common on practically all young trees and shrubs in a nursery.

LEAFHOPPERS (Jassidae)

New York — M. D. Leonard and F. H. Lathrop (August 17): Many leaves of young growth were very severely curled on a tree about 15 feet high as a result of the feeding on nymphs at Kinderhook. A number of other trees in an orchard were appreciably affected, but this one was the worst example we have ever seen.

A. L. Pierstorff (August 11): Leafhoppers are abundant on one-year-old nursery trees at Honeoye Falls. Instead of making the characteristic mottled injury, they seem to curl the apple leaves much the same as aphids, but not quite so severely.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts A. I. Bourne (July 25): In northern Worcester County Mr. Fiske reports that he is finding the San Jose scale somewhat more prevalent than last year. This, while the only specific report coming to our attention this month, bears out the general impression among the fruit growers which has been held for some time that this pest is gradually coming back into abundance in the State.

Ohio H. A. Gossard (July 25): The San Jose scale has practically disappeared from some neighborhoods where it was rather numerous in southern Ohio when spring opened. On this account some tests of the comparative efficiency of scale remedies are rendered practically worthless because there is no scale on the check trees and no differente can be found in the various treatments. Of course, there may be later developments which will have some significance. Some unsprayed trees in northern Ohio have an abundance of San Jose. (August 20): San Jose scale was received from Shiloh August 2. Specimens of apple were quite spotted over by it.

Indiana B. A. Porter (August 20): Second-brood crawlers began to appear July 20 at Vincennes, on apple, peach, etc. Since August 1 crawlers have been produced in large numbers daily. In orchards where poor control was obtained last winter, branches are beginning to die, and the fruit is badly spotted.

J. J. Davis (August 22): With the new lubricating oils, as well as miscible oils, orchardists are making headway against the scale. There still remain, however, many serious infestations, but most of the orchardists are alive to the situation and will stress dormant oil spraying the coming season. Until last year the scale was not recognized as a serious pest on peach, but this year several peach orchards have become alarmingly infested.

Illinois W. P. Flint (July 26): The season thus far has been very favorable to the increase of this insect and it is showing in large numbers on fruit, branches, and leaves of poorly sprayed orchards.

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

Massachusetts A. I. Bourne (August 23): The European red mite is apparently normally abundant generally, with occasional regions of slightly greater abundance. The protracted dry spell which persisted up to the early and middle part of the month was very favofable to their rapid increase, and from some sections of the State estimates of these mites being much more abundant, up to twice as many as last year, have been sent in. A rather curious fact in connection with this pest is that on a block of trees which had been given

a dust treatment, the mites were apparently much more abundant than on adjoining blocks which had been sprayed.

Connecticut — Philip Garman (August 1-23): Baldwins show considerable burning at Branford and Wallingford. This pest is more abundant than last year. A dry summer has favored development.

Maryland — C. C. Hamilton (August 25): Rains the past three weeks have put the pest well under control, except at Havre de Grace. Here there have been only a few light showers, and the mites are abundant and still doing damage. Indications are that there will be severe injury tonfruit buds on peaches. Cool nights and damp weather the last of July caused the mite to migrate to the limbs and lay winter eggs there. These have hatched. Infestations occur at Havre de Grace, Easton, Berlin, and College.

West Virginia — W. E. Rumsey (August 15): Apple, maple, box, and other plants are seriously affected, and have been since early spring, by an undetermined red spider at Morgantown.

Ohio — H. A. Gossard (July 25): The European red mite has appeared very numerously in northern Ohio and is known to be present in great numbers in orchards as far east as Youngstown and as far west as Toledo. It is causing severe browning of the leaves of apple, plum, and peach. Members of our staff have given it personal attention at Youngstown, in the peach orchards about Danbury, and in plum and apple orchards at Waterville. It was reported very numerous on specimens of apple leaves sent in from Toledo July 12.

G. A. Runner (August 11): This insect is abundant on many fruit trees and ornamentals in the vicinity of Sandusky. Unsprayed grapevines have been observed which were heavily infested, but injury to foliage seemed slight compared to injury to foliage of peach and apple. It is also abundant in many apple orchards in counties bordering on Lake Erie. Foliage injury is severe in orchards in which lime-sulphur has not been used in summer sprays.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

West Virginia — W. E. Rumsey: (The locality given in the Insect Pest Survey Bulletin Vol. 3, page 126, should be Raymond City instead of Morgantown.)

Michigan — R. H. Pettit (July 10): I have to report that our single case of apple flea-weevil seems to be a very difficult one indeed to control. Repeated sprays of powdered arsenate of lead at the rate of $1\frac{1}{2}$ to 2 pounds to 50 gallons of water are reported to have failed thus far. The insect is spreading in spite of the sprays. Samples sent in show the leaves to have been badly eaten after these sprays were put on.

WILLOW CURCULIO (Cryptorhynchus lapathi L.)

Michigan

R. H. Pettit (August 9): Yesterday we discovered some apples that had holes eaten in them and in the course of an hour or two we found that Cryptorhynchus lapathi was the culprit. Today a gentleman from Lansing brought in a number of plums with similar holes eaten in them and a specimen of Cryptorhynchus that he had actually caught in the act. He said a large proportion of his ripening plums were blemished in this way. The injury amounts to more than a blemish, however, since in the case of the plum brown rot immediately shows the work of the beetle.

A LEAF-BEETLE (Metachroma interruptum Say)

Indiana

J. J. Davis (August 22): Injury to apples by an unknown insect was first reported by Dr. B. A. Porter, who found, on July 13, considerable injury to the fruit of Grimes trees. The surface was more or less covered with gouged-out places, often these being confluent so that eaten areas up to considerable size might be found on an apple. The insects responsible were not found. When Porter showed this infestation to me, a couple of weeks later, no additional injury had been done, although the total injury to Grimes fruit in this orchard was considerable. Specimens were submitted to W. P. Flint, who had reported similar injury by Metachroma interruptum Say, in western Illinois a year ago and he pronounced it as certainly the work of that beetle. According to Blatchley, it was collected but once in Indiana, namely in Vigo County, in the west-central part of the State, June 16. He also notes that it had not, previously to his record in Indiana, been recorded east of Kansas. This beetle is one which may become an important pest. The orchard where first found at Decker, Knox County, had been thoroughly sprayed according to the recommended spray schedule.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

Connecticut

Philip Garman (August 20): This pest is severely injuring a large pear orchard at Southington.

New York

E. W. Pierce (August 4): Hard-shell nymphs and flies of the second brood are appearing in considerable numbers in Ontario County. (August 11): The dry weather has caused psylla to multiply rather rapidly.

G. E. Smith (August 4): The weather has been very favorable for pear psylla development, and considerable honeydew covers fruit and foliage in some orchards in Orleans County.

H. W. Fitch (August 4): This pest is abundant enough to cause many growers at Sodus to spray.

F. H. Bond (August 4): At Oswego the psylla has become had in some orchards. (August 11): The psylla outbreak seems to have subsided.

R. J. Palmer (August 11): The psylla in Monroe County has multiplied rapidly.

P. J. Chapman (August 11): In Genesee County the pear psylla is on the increase with favorable weather for its development, but commercial orchards have them fairly well controlled.

PEAR SLUG (Caliroa cerasi L.)

Ohio — H. A. Gossard (July 25): The pear slug was received from Apple Creek July 14 on pear. (August 20): This pest was received from Columbus August 17 on pear.

Indiana — B. A. Porter (July 27): Several acres of cherry orchards have been completely defoliated by the second-brood slugs at Vincennes.

Nebraska — M. H. Swenk (August 1): Numerous complaints of injury by the pear slug have been received during the month.

PEACH

PEACH-TWIG MOTH (Anarsia lineatella Zell.)

Indiana — H. F. Dietz (July 18): The peach-twig borer is becoming quite a serious pest in young peaches in the southern part of the State.

Texas — F. C. Bishopp (August 25): This insect has caused some damage to peaches in the vicinity of Dallas this year, but their abundance is not nearly so great as during last season, when over 75 per cent of the peaches were infested.

California — California Weekly News Letter, Vol. 5, No. 15 (July 28): The season of 1923 has not been marked by serious damage from the peach-twig borer and there has not been as much damage to unsprayed orchards as to some sprayed orchards last year. We have no difficulty in controlling the pest with lime-sulphur spray and expect to continue spraying with lime-sulphur in the spring, as in the past, since under conditions at Ontario such treatment insures against severe damage from either "curl leaf" or twig-borer.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

New York — Henry Dietrich (July): The shot-hole borer is fairly injurious in peach orchards at Appleton.

Ohio — H. A. Gossard (July 25): Specimens of this pest came from Sullivan June 25 where it was attacking cherry, from Toledo, June 27, and from Marion July 20. (August 20): Specimens came from Marion August 3 on cherry and August 13 from Pleasant Hill on plum. An inquiry without specimens was received from Danbury July 24 regarding control measures for this species.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia — O. I. Snapp (August 20): The second generation will be very small this year and of little economic importance. The second generation did not put in its appearance this year in the Georgia Peach Belt until the peach crop had been harvested. About 8,600 cars of peaches were shipped from Georgia this season, and the general quality of the fruit was the best since 1918. The curculio has been remarkably well controlled.

A "TUMBLE BUG" (Phanaeus carnifex L.)

New Mexico — W. E. Emery (August 1): This insect is doing considerable damage to ripening fruit, in some places at least 50 per cent to peaches and plums, and was also noted on the corn, working on the tassel, where at least 10 per cent of the corn tassels were destroyed in Dona Ana County.

GREEN SOLDIER-BUG (Nezara hilaris Say)

Maryland — C. C. Hamilton (August 22): Determination was made by comparing injury with that reported in Ohio (Bul. 310 on the green soldier-bug). The variety Hale is injured worst, although all varieties are attacked. Injury ranges from severely deformed fruit to that with only a few feeding punctures. Infestations occur at Belair and Havre de Grace.

Ohio — H. A. Gossard (August 20): The green soldier-bug was taken in a Wooster locality August 18 injuring peach. An inquiry was received from Port Clinton July 23, regarding an outbreak of this pest on peach, and a later investigation by one of the members of our staff proved that a rather mild outbreak was occurring in a few orchards.

G. A. Runner (August 11): Injury to peaches by the green soldier-bug has been observed in several orchards in the Ottawa County peach district.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia — O. I. Snapp (August 20): At Fort Valley the San Jose scale has increased rapidly during the summer months. Some growers, dissatisfied with the results from liquid lime-sulphur or its substitutes, will use lubricating-oil emulsion this winter.

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut — W. E. Britton (August 24): Many terminal shoots have been tunneled by larvae at Greenwich. A few were noticed last year in the same section. They are more abundant than in an average year.

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

Wisconsin — A. A. Granovsky (August 18): Cherry aphid attacks cherry orchards year after year in the locality of Sturgeon Bay. Injury is largely done in a localized spot. Injury may be considered as severe, producing yellowing and defoliation of trees, as well as reducing the growth of terminal shoots and, consequently, the yield of cherries. Early cherries were more infested than late varieties.

PEAR AND CHERRY SAWFLY (Caliroa cerasi L.)

Indiana — J. J. Davis (August 22): The work of this insect, resulting in complete defoliation, is evident throughout the southern part of the State.

CHERRY FRUIT FLY (Rhagoletis cingulata Loew)

New York — Henry Dietrich (July): There is a considerable amount of infestation this season at Appleton.

H. W. Fitch (August 4): One tree examined at Sodus showed 32 per cent of the fruit infested.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Host.)

Massachusetts — A. I. Bourne (July 25): The plum curculio seems to be doing a great amount of injury this year, and in every section of the State reports of normal or somewhat greater abundance than last year are coming in. This particular species seems to be at the present time the outstanding apple pest of the State, and to all appearances is the one farthest from control.

Louisiana T. H. Jones (July 24): Infested peach fruit was sent in by Mr. M. J. Voorhies, County Agent of St. Martin Parish, with the report that "we seem to have the same trouble all over the parish."

RASPBERRY

TWO-SPOTTED OBEREA (Oberea bimaculata Oliv.)

New York C. R. Crosby (August 1): A patch of raspberries was badly infested at Skaneateles. (July 12): A small plot was badly infested at Binghamton.

RED SPIDER (Tetranychus spp.)

Ohio E. W. Mendenhall (July 26): Red spider mites are found general in the State, infesting raspberry plants and doing some damage.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Iowa F. A. Fenton (July 28): A sample of several raspberry canes was received literally plastered with adult scales of this insect. This scale insect had been a very serious pest on these raspberries.

CRANBERRY

SPOTTED CUTWORM (Agrotis c-nigrum L.)

Massachusetts A. I. Bourne (August 23): The spotted cutworm has done more injury on the cranberry bogs than in any previous year. We find that this insect is most likely to attack bogs that are bared of their winter flowage very late in May or in early June. It has cleaned up the crop of more than 150 acres of bog here this season, reducing the prospective crop by fully 10,000 barrels.

GRAPE

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Massachusetts A. I. Bourne (July 25): The rose chafer has been unusually abundant the present season, practically throughout the State, and has not only caused considerable annoyance by its feeding on roses and grapes, which it normally feeds on every year, but complaints have been received of its injuries to a wide range of food plants, which comprise many of the small fruits, ornamentals, and garden crops, as well as some few reports of its feeding on the foliage of young fruit trees.

New York — M. D. Leonard (July 27): This pest is abundant on bayberry and several other plants outside of Jamica, L.I., near a pond.

F. J. Whaley (August 4): There were several bad infestations on grape and rose in private gardens during the first week in August at Albany.

Ohio — H. A. Gossard (July 25): The rose bug was perhaps more numerous than usual.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York — K. E. Paine (August 10): In Chautauqua County on unsprayed or on poorly sprayed vineyards the leafhopper injury is showing very badly and wherever a grower missed a row in spraying a marked difference can be seen.

West Virginia — W. E. Rumsey (August 15): Foliage is completely destroyed in some cases and generally seriously injured at Morgantown.

Ohio — H. A. Gossard (August 20): The grape leafhopper was received from Toledo August 15 on grape and also from Columbus August 17.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Ohio — H. A. Gossard (July 25): The eight-spotted forester came from Windham July 6, where it was attacking grape.

Indiana — H. F. Dietz (July 18): The eight-spotted forester has been reported as a serious pest of grapes this year, especially in the vicinity of Indianapolis and Muncie. This is the first time in the past five years that we have had any reports of damage by this pest.

GRAPE-BERRY MOTH (Polychrosis viteana Clem.)

Louisiana — T. H. Jones (July 16): Larvae and injured fruit have been sent in by Mr. M. J. Voorhies, County Agent of St. Martin Parish, with the report that the larvae are "injuring grapes in this section."

GRAPEVINE APHID (Macrosiphum illinoisensis Shim.)

Massachusetts — C. R. Crosby (August 15): Infested grape leaves have been received from Harwich.

New Jersey — M. D. Leonard (June 10): The grapevine aphid is abundant on young leaves and tips of shoots in a small grape arbor at Ridgewood.

CURRANT

STALK BORER (Papaipema nitela Guen.)

New York — M. D. Leonard (July 17): Mary K. Peters of the Farmingdale School of Agriculture, L. I., reports that a patch of red currants are badly injured by larvae boring in the young canes. She also reports the larvae unusually abundant in corn this year in her section.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

Georgia — O. I. Snapp (August 18): The fall webworm is unusually abundant in middle Georgia this year, near Hawkinsville, and is doing considerable damage to pecan trees.

John B. Gill (August 2): The fall webworm is very prevalent in pecan orchards in many sections.

PECAN-NUT CASE-BEARER (Acrobasis hebescella Hulst)

Georgia — John B. Gill (August 2): We find that the second brood of the pecan-nut case-bearer has not been so destructive. The first-brood larvae, appearing during the latter part of May and the first week of June, caused very serious damage to the crops in various pecan orchards in southern Georgia and northern Florida. According to our observations the worst infestations occurred around Baconton, Ga.

PECAN-LEAF CASE-BEARER (Acrobasis nebulella Riley)

Georgia — John B. Gill (August 2): Practically all adults of the pecan-leaf case-bearer have emerged and oviposition has been taking place in peach orchards for some time. The very small larvae are now feeding on the under surface of the leaves, and, judging from the abundance of larvae at this date, the insect will go into hibernation in great numbers. On account of the restricted feeding by the larvae during the late summer, no serious damage is done at this season of the year, but when abundant, the larvae are very destructive to the unfolding buds in the spring. We have succeeded in perfecting a very good control of this pest, and during the next month and early in September many pecan growers in this immediate section will be spraying their orchards for the protection of next year's crop.

HICKORY NUT WEEVIL (Belanimus caryae Horn)

Georgia — John B. Gill (August 2): Pecan growers in Lamar County have reported serious losses to pecan crops through the attacks of the pecan weevil. During the early part of July the writer made a trip through this territory in order to look

into the pecan weevil situation. Larvae were found at varying depths in the soil in pecan orchards, but from observations made it was impossible to predict or determine the infestation of the nut crop for this year. The adults will likely be occurring on pecan trees during the early part of September and will continue their attacks until the advent of cold weather.

LITTLE HICKORY APHID (Monellia caryella Fitch)

Georgia — John B. Gill (August 2): The little hickory aphid has been occurring abundantly on pecan trees during this season. This species appears to confine its attacks to the underside of the leaves, and so far it has not been observed feeding on the young nuts. The foliage of heavily infested pecan trees often becomes drenched with the honeydew exudations. At present this insect is not considered as a serious pest to pecans.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Louisiana — T. H. Jones: Infested orange leaves were received from J. A. Wogan, New Orleans, July 28, and from J. Werburg, Hammond, August 2. Infested privet leaves were received from Warnerton August 3.

California — California Weekly News Letter, Vol. 5, No. 16 (August 11): A recent quarantine, known as Quarantine Order No. 42, pertaining to the citrus whitefly, was placed on the cities of Sacramento, Marysville, and Yuba City by the State Department of Agriculture. This order was for the purpose of preventing the shipment of any host plants of the citrus whitefly into other parts of the State.

TRUCK-CROP INSECTS

MISCELLANEOUS FEEDERS

BLISTER BEETLES (Meloidae)

Maine — E. M. Patch (July 24): Epicauta pennsylvanica DeG. is reported by Mrs. F. C. Knowles as feeding on potato at Stockholm, and Macrobasis unicolor Kby. is reported by Wendell A. Sharp as numerous in some potato fields this year.

New York — C. R. Crosby (August 1): Epicauta marginata Fab. is reported from Tarrytown as seriously injuring plants in a vegetable garden.

Pennsylvania — T. L. Guyton (July 30): Epicauta cinerea Foerst. is reported from Peach Bottom as doing serious damage.

North Dakota — R. L. Webster (July 13): Lytta nuttalli Say is reported from Kensal as more than usually common.

Nebraska — M. H. Swenk (August 1): The gray blister beetle was reported destroying tomatoes in gardens in Seward County during the last week in July, and the large black blister beetle, Epicauta corvina Lec., was reported as injuring potatoes in Knox County. The striped blister beetle, Epicauta lemniscata Fab., was reported doing injury in gardens in Thayer County during the second week in August.

CUTWORMS (Noctuidae)

New York — Roy Latham (August 6): During the last few weeks there has been an outbreak of Agrotis ypsilon Rott. in Orient, and at present it is the worst ever known here. It is doing great damage in young transplanted sprouts, cabbage, and cauliflower. It is also found in late potatoes and various other crops and weeds. Trenches had to be dug around some fields. I have counted 25 under the small lumps of dirt at the base of a small plant 4 inches high.

A. M. Hollister (July): Cutworms have done about the most damage of any pest in Saratoga County. In the southern part of the county, where considerable truck gardening is carried on, they have been very troublesome. Many farmers have used the bran, Paris green and molasses poison and in this way have done good control work. It is difficult to make an estimate of the damage done by these pests.

Ohio — H. A. Gossard (July 25): One of the glassy cutworms was received from Conway June 25, where it was said to be attacking beets.

GREEN SOLDIER-BUG (Nezara hilaris Fitch)

Indiana — J. J. Davis (August 22): The green soldier-bug has been reported from sections of the State from the extreme south end to the northeast corner of the State. In most cases it was simply reported as abundant and no apparent injury noted. The first record was from Delphi on July 25. In several localities it was reported on corn, and one correspondent blames these insects for the unthriftiness of one section of this corn field. It was also reported as occurring on peach, but the correspondent has not advised us that injury occurred. At Corydon and south to the Ohio River we found this insect abundant on Lima beans August 20. Young and adults were observed with their beaks inserted in the green pods and in the stem at the base of the pod. The beans have not developed or are deformed in the pods, and as there is no disease present, and since the injury is what we might expect, it seems very likely that the soldier-bug is responsible.

Michigan — Eugenia McDaniel (August 18): The green soldier-bug has been received this morning from Cass County, Mich., where it is said to be attacking beans in the field. The insects puncture the young pods and are causing considerable injury.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida — F. S. Chamberlin (August 6): Pods in one field are severely damaged by the bugs at Quincy.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Massachusetts — A. I. Bonfne (July 25): Infestation has been rather uneven throughout the State. In this particular region, Amherst, the pest has been somewhat more abundant than for several years, whereas from other sections of the State, notably in Barnstable County, there have been so few beetles that up to the first or middle of July it had not been necessary to apply any arsenate of lead for their control. The pest is apparently not more than normally abundant except in isolated areas.

New York — Roy Latham (July 15): Slugs have not been known to be so abundant in years in Suffolk County. Arsenate failed to kill them although more than usual was used. Many had entered the ground and were out in hard-shelled beetles by July 10. Not in 20 years have so many gone into the ground as at the present time. In fields that were red with them they have gone into the ground after being sprayed three times. This looks bad for next season's early crop.

Ohio — H. A. Gossard (August 20): Perillus bioculatus Fab. was received from Shelby August 1, where it was reported to be doing very effective work in destroying the Colorado potato beetle.

North Dakota — R. L. Webster (August 3): Reports from county agents in northwestern counties indicate that many fields have been severely injured this year.

Nebraska — M. H. Swenk (August 1): The Colorado potato beetle was more than ordinarily numerous in some parts of the potato growing district of western Nebraska, especially in Morrill County, during July.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

New York — M. D. Leonard (June 2): Very abundant at Hudson River State Hospital Farm. Over 4,000 young plants were killed in one 5-acre field at Poughkeepsie.

Roy Latham (July 20): Second brood were coming in large numbers on July 15 and browning potato fields in Suffolk County.

C. R. Crosby (August 9): Potato tubers injured by the larvae have been received from Suffolk County.

Massachusetts — A. I. Bourne (July 25): Flea-beetles on potatoes, tomatoes, etc., are causing about the usual amount of trouble, and do not seem to be much worse than usual except in isolated cases.

POTATO APHID (Macrosiphum solanifolii Ashm.)

Massachusetts — A. I. Bourne (August 23): Aphids were very generally prevalent at the Market Garden Field Station at Lexington on market garden crops, particularly on tomatoes. The particular species of aphid was not reported.

Connecticut — W. E. Britton (August 7): The potato aphid was later than usual in reaching injurious abundance. It has now (August 24) mostly disappeared at the Station Farm, Mt. Carmel, and Hamden.

New York — Roy Latham (July 20): Many young tomato plants are destroyed. Potato fields were covered with this insect by July 10, but by July 20 were controlled by parasites in Suffolk County.

W. D. Mills (August 4): Infestation has been severe, but showers have reduced the numbers of lice in Nassau County.

Indiana — H. F. Dietz (July 18): Earlier in the season tomatoes were attacked by the potato aphid. These infestations were pretty well cleaned up by the ladybird beetles, especially the convergent ladybird, the nine-spotted ladybird, and the maculate ladybird. As a result of this infestation, however, many tomatoes are showing infection with mosaic and spindling sprout disease at this time.

Wisconsin — A. A. Granovsky (August 18): Potato fields of Door County are infested with two principal aphids, Macrosiphum solanifolii Ashm. and Myzus persicae Sulz. The first, however, occupies a secondary place in number, Myzus being more common. Injury is not considered serious.

POTATO LEAFHOPPER (Empoasca mali LeB.)

New York — E. E. Paine (August 10): Injury is noticeable in some fields in Chautauqua County.

E. W. Pierce (August 4): This insect is causing hopperburn in fields that have not been sprayed in Ontario County.

Ohio — T. H. Parks (August 21): This insect is now present in its usual injurious numbers in most fields of potatoes. Hopperburn is killing the tops of unsprayed plants in central and southern counties where the crop was planted in May. This is the sixth successive year for such damage.

Indiana — J. J. Davis (August 22): The potato leafhopper is gradually increasing its area of destruction each year.

Illinois — W. P. Flint (July 26): The potato leafhopper has been very abundant this season on potatoes, beans, and alfalfa.

Wisconsin — A. A. Granovsky (August 19): Potato leafhoppers are very common, injuring potato fields by causing hopperburn. The disease appeared in the first part of August and on some early varieties of potatoes symptoms were present in the latter part of July.

Iowa — F. A. Fenton (July 28): The potato leafhopper is not as serious as it has been for several years and will not very seriously affect the potato crop in the State this year, although in certain localities it has been destructive to potatoes.

TOMATO FRUITWORM (Heliothis obsoleta Fab.)

New York — L. A. Zehner (August 4): Severe damage to tomatoes is reported in Onondaga County.

Indiana — J. J. Davis (August 22): The tomato fruitworm has been a serious pest of tomatoes throughout the southern half of Indiana.

Illinois — W. P. Flint (July 26): The corn earworm is doing some damage to tomatoes in the southern part of the State. Full-grown larvae were received as early as July 10.

IMPORTED CABBAGEWORM (Pontia rapae L.)

New York — Henry Bird (August): Pontia rapae, which usually gets to the vicinity of Rye in great numbers by mid-August from Long Island and New Jersey, is conspicuous by its absence at this date.

G. E. Smith (August 4): The imported cabbageworm is very plentiful in Orleans County.

E. W. Pierce (August 11): This insect is evident in most fields and abundant in some in Ontario County.

L. J. W. Jones (August 21): This insect is exceedingly common in Rochester and extremely abundant near Victor.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Massachusetts A. I. Bourne (July 25): The cabbage maggot in some sections of the State has apparently attained numbers considerably greater than last year. In Bristol County cabbage and cauliflower are reported as being seriously attacked. Damage already caused is estimated at about 20 to 25 per cent. Where corrosive sublimate treatment has been carried out, the damage has been cut down to a comparatively insignificant figure. Injury to radishes from this insect throughout the market garden section of the western part of the State has apparently been very serious. At least one plat was entirely spoiled by the maggot. This particular crop, not lending itself to the corrosive sublimate treatment, suffered considerable damage.

Ohio H. A. Gossard (July 25): The cabbage maggot was received from Beaverdam June 6 and from Medina June 15, on cabbage plants. We received inquiries concerning control of this insect from Bloomville June 26; Sonora June 18, where it was attacking radishes, Toledo June 12, Greenwich June 11, and Elyria June 6.

CABBAGE APHID (Brevicoryne brassicae L.)

New York G. E. Smith (August 4): Cabbage aphids are causing trouble in some fields in Orleans County.

E. W. Pierce (August 11): Few cabbage aphids have been noticed, in spite of the dry weather in Ontario County.

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Indiana J. J. Davis (August 20): The harlequin cabbage bug was abundant and destructive in gardens south of Corydon, especially injuring cauliflower.

A BUG (Peribalus limbolarius Stal)

Nebraska M. H. Swenk (August 1): This bug was reported as destroying a patch of cabbage in Dawson County during the first week in August.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

Ohio H. A. Gossard (July 25): The zebra caterpillar was received from Dayton July 20, attacking cauliflower, and from Wapakoneta July 29, attacking cabbage.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Nebraska — M. H. Swenk (August 1): A case of nymphs of the buffalo treehopper injuring strawberries came to notice in western Nebraska (Dawes County).

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Ohio — H. A. Gossard (July 25): The strawberry leaf-roller was received from Kipton June 28, and from Kansas July 5. From the specimens received and the reports of our correspondents the damage was evidently very severe in both these localities. An inquiry was received from Elmore June 15 regarding control of this pest.

Indiana — H. F. Dietz (July 18): The strawberry leaf-roller, which last year was a very serious pest in the northern half of Indiana, is now working southward and becoming more abundant in the southern half of the State.

Nebraska — M. H. Swenk (August 1): Injury by the strawberry leaf-roller was reported from Webster County.

BEANS

RED SPIDER (Tetranychus sp.)

Virginia — H. Spencer (July 8): Red spider is exceptionally severe on Lima beans in the Eastern Shore district of Virginia and it is thought that the crop will be a total loss because of them. In the Norfolk district fields of eggplants have been severely damaged. We have had many inquiries about red spider on ornamental shrubs and several kinds of evergreens.

BROWN COLASPIS (Colaspis brunnea Fab.)

New York — C. R. Crosby (July 28): This insect is doing considerable damage to a crop of field beans at Alloway.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Virginia — Neale F. Howard (August 22): This insect is reported from Wise County.

Neale F. Howard (August 22): This insect is reported from Buncombe and Madison Counties.

Georgia — J. B. Gill (August 1): The Mexican bean beetle has been observed in gardens around Thomasville, throughout the season. The adults and larvae have been very abundant on snap beans and Lima beans, upon which they caused very serious damage. Within

the past two weeks they have been observed on cowpeas growing in gardens around town. This species does not seem to attack the cowpeas when there are beans for it to feed upon.

Ohio — Neale F. Howard (August 14): The Mexican bean beetle larvae have been found at Waverly. This is in north-central Pike County, about 25 miles north of the Ohio River, in the south-central part of the State. (August 22): This beetles has been reported from Adams, Highland, Pike, and Scioto Counties.

Indiana — J. J. Davis (August 20): Scouting in the southern half of Harrison failed to reveal the presence of the Mexican bean beetle.

Kentucky — Neale F. Howard (August 22): The Mexican bean beetle has been reported from Harlan, Letcher, Cumberland, and Spencer Counties.

Mississippi — Neale F. Howard (August 22): The Mexican bean beetle has been reported from Tishomingo County.

PEAS

PEA APHID (*Illinoia pisi* Kalt.)

Nebraska — M. H. Swenk (August 1): During early July numbers of the pea aphid began to appear, on their host plants, but were checked by natural enemies and drier weather conditions.

CUCUMBER

ONION THRIPS (*Thrips tabaci* L.)

Virginia — H. Spencer (July 7): *Thrips tabaci* L. has done considerable damage to a field planted to cucumbers and cantaloupes.

PICKLEWORM (*Diaphania nitidalis* Cramer)

Missouri — E. Haseman (August 2): County Agent Tolbert of Kennett, Mo., reports 50 per cent or more of the maturing cantaloupes affected; at Columbia most of the developing summer squashes are affected.

STRIPED CUCUMBER-BEETLE (*Diabrotica vittata* Fab.)

Massachusetts — A. I. Bourne (July 25): The striped cucumber-beetle seems to be somewhat more prevalent than it normally is throughout the State, all our records on these beetles bearing out this statement, with the exception of Bristol County, where the County Agent reports that while normally abundant they do not seem to be in any greater numbers than last year. Dusting

and spraying are very generally employed in their control, particularly in the market garden section in the eastern part of the State, and seem to be giving more or less satisfactory results. One factor which has been noted regarding them, particularly in Middlesex County, is that they apparently started later in the season than normally, and this will account for the fact that they are at present abundant in the stems and blossoms, when under usual circumstances their injury would be practically over at this period.

New York — Henry Dietrich (July): The striped cucumber-beetle has been readily controlled with nicotine dust.

West Virginia — W. E. Rumsey (August 15): Leaf injury occurs as usual, but the most serious loss is from larvae in roots. June 15 to July 15 they were most abundant in the roots. Some recent injury has been reported.

Ohio — H. A. Gossard (August 20): Inquiries regarding control of the striped cucumber-beetle were received from many parts of the State.

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

Delaware — J. F. Adams (July 1): The 12-spotted cucumber-beetle is very abundant and causing considerable injury in Sussex County.

Ohio — H. A. Gossard (July 25): The 12-spotted cucumber beetle was received from Lorain June 13, where it was attacking muskmelons.

New Mexico — R. Middlebrook (July 23): Throughout this entire State this insect is attacking all crops, abundance as compared with an average year being about the same.

MELONS

A GROUND-BEETLE (Harpalus (or very close to this genus) det. Adam Boving

Mississippi — R. W. Harned (July 20): George Houston, Satillo, Miss., reports these insects seriously injuring his watermelons: " I planted my 7-acre late watermelon patch on the 20th of June, and got a perfect stand, but now on the 14th of July they are killed by these worms. They work just under the ground. You can see their work on roots of these melons. These worms are the most destructive things that have ever been on watermelons."

MELON APHID (Aphis gossypii Glov.)

Ohio — H. A. Gossard (July 25): The melon aphid was received from West Liberty on cucumber July 12. Other inquiries evidently referring to this species came from Chardon and from Columbus. (August 20): Aphis gossypii came from Geneva August 6 on muskmelons.

Indiana — J. J. Davis (August 22): This insect has been a pest throughout the melon season. In some sections large acreages were plowed up before harvest on account of it.

Nebraska

Nebraska — M. H. Swenk (August 1): For the first time in several seasons there has been very little injury during July by the melon aphid. These pests began to increase early in the month but were brought under almost complete control by the parasite Aphidius testaceipes, assisted by the ladybird beetle Hippodamia convergens.

New Mexico — R. Middlebrook (July 20): The melon aphid is reported from Messilla Valley as attacking melons. Growers are now spraying, so they will get no chance. Abundance is greater as compared with an average year, and also last month.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Massachusetts — A. I. Bourne (July 25): The common squash bug is apparently normally abundant generally throughout the State.

New York — A. M. Hollister (July): Squash bugs have been abundant and caused considerable damage.

K. E. Paine (August 4): Squash bugs are numerous and destructive in Chautauqua County.

Ohio — H. A. Gossard (July 25): The squash bug was found to be very numerous and destructive among melons and cucumbers at Canton July 12. It was received from Dalton July 5, and from Middletown July 17, where it was reported to be attacking cucumbers. (August 20): We had inquiries for the control of Anasa tristis from Mansfield July 24, and from Lodi August 11, and have also had a number of local phone calls during the last week or two regarding the same insect.

Nebraska — M. H. Swenk (August 1): The squash bug was more than ordinarily injurious to squashes and pumpkins during the entire month of July in Nebraska.

SQUASH-VINE BORER (Melittia satyriniformis Huebn.)

Massachusetts — A. I. Bourne (August 23): The squash-vine borer larvae have been observed to be beginning to leave the plants and enter the ground. Infestation throughout the State seems to be rather uneven in its extent. In this immediate region it is not quite up to normal, and a report from the Market Garden Field Station at Lexington states that up to the middle of the month little or no evidence of damage had been noted.

Iowa — F. A. Fenton (July 28): The squash-vine borer is more destructive to squash and pumpkin vines this year than for several seasons. The second generation is actively at work at the present time.

ONION

ONION THRIPS (Thrips tabaci L.)

New York — Roy Latham (August 18): The onion thrips has been reported from Orient, attacking cauliflowers and Brussells sprouts. Abundance as compared with an average year seems to be much greater.

F. H. Bond (August 4): The onion thrips has been reported from Oswego County; nowhere serious.

Indiana — J. J. Davis (August 22): The onion thrips has been an onion pest of considerable importance in several sections in northern Indiana.

Michigan — Eugenia McDaniel (August 18): The onion thrips has been reported from a Michigan onion field, where a good percentage of the crop has been destroyed, at Charlotte, Mich.

ONION MAGGOT (Hylemyia antiqua Meig.)

New York — M. D. Leonard (June 2): A little damage is being done to young seedlings at Hudson River State Hospital farm at Poughkeepsie.

Ohio — H. A. Gossard (July 25): An inquiry was received from Celina June 16 for recommendations to control the onion maggot.

RHUBARB

RHUBARB CURCULIO (Lixus concavus Say)

Ohio — H. A. Gossard (July 25): The rhubarb curculio was received from Kent June 18. Several specimens were brought to my office

from nearby points about Wooster and as far distant as Canton, the complaint being that they were attacking rhubarbs. In every case it was leanned that dock plants were abundant in the neighborhoods where the rhubarb grew.

HORSERADISH

HORSERADISH FLEA-BEETLE (*Phyllotreta armoraciae* Koch.)

New York — C. R. Crosby (July 28): The horseradish flea-beetle is seriously injuring a field of horseradish in Elmira.

TURNIP

TURNIP APHID (*Rhopalosiphum pseudobrassicae* Davis)

Connecticut — E. M. Ives (July 24): This aphid has been reported from Meriden, where it was attacking winter turnips.

W. E. Britton (August 24): The turnip aphid has been reported from New Haven, and Hamden, attacking turnips and kale.

Nebraska — M. H. Swenk (August 1): During early July numbers of the turnip aphids began to appear on their host plants, but were checked by natural enemies and drier weather conditions.

GREEN PEACH APHID (*Myzus persicae* Sulz.)

Ohio — H. A. Gossard (August 20): The green peach aphid was received from Shreve August 17 on turnip.

BEAN APHID (*Aphis rumicis* L.)

New York — M. D. Leonard (August 21): A patch of 20 rows each 120 feet long was partly cleaned up by this aphid.

CARROT BEETLE (*Ligyrus gibbosus* DeG.)

West Virginia — W. E. Rumsey (August 21): Specimens of adults have been unusually abundant for the past month. Usually they are rare at this place.

SWEET POTATO

SWEET-POTATO WEEVIL (*Cylas formicarius* Fab.)

Oklahoma — E. E. Scholl (June 6): Larvae of the sweet-potato weevil are present at Comanche, in Stephens County, Okla.. These probably originated from slips grown at Harlingen, Texas.

SOUTHERN FIELD-CROP INSECTS

COTTON

COTTON BOLL WEEVIL (*Anthonomus grandis* Boh.)

North Carolina B. R. Coad (August 16): Reports have been received from 6 points in the State, one report from Cumberland County indicating that great damage is expected. Other reports merely indicate presence of the pest.

South Carolina B. R. Coad (August 16): Reports have been received from 16 localities in this State. Six record heavy infestations, with serious damage. The remaining localities merely indicate that the pest is present.

Georgia B. R. Coad (August 16): Reports have been received from 22 localities. Fifteen report heavy damage by weevils puncturing the bolls.

Florida B. R. Coad (August 16): A single report indicates the presence of this insect in Madison County.

Alabama B. R. Coad (August 16): Reports were received from 30 localities. Thirteen of these localities, generally distributed over the State, indicate heavy damage by this pest. The remaining localities indicate slight damage or the mere presence of the pest.

Mississippi B. R. Coad (August 16): Reports have been received from 77 points in the State. Twenty-four report heavy infestation with serious damage. At the remaining points damage is slight.

Louisiana B. R. Coad (August 16): Reports have been received from 6 localities. Three report heavy damage, weevils puncturing the bolls.

Tennessee B. R. Coad (August 16): Reports have been received from 20 localities. Three report serious damage. At the remaining localities damage is slight.

Arkansas B. R. Coad (August 16): Reports have been received from 37 localities. Five report damaging infestations, the remaining localities report slight damage.

Oklahoma B. R. Coad (August 16): Reports have been received from 4 localities, with heavy damage at one point.

Texas B. R. Coad (August 16): Reports have been received from 8 localities, with serious damage at 2 points.

COTTON LEAFWORM (*Alabama argillacea* Hubn.)

South Carolina J. A. Berly (August 28): An outbreak of this insect occurred in Oconee County about August 15, requiring control measures owing to the lateness of the cotton crop.

Georgia — B. R. Coad (August 17): Leafworm was reported under date of August 14 as damaging crops in Floyd County.

Alabama — W. E. Hinds (August 23): Cotton worm has been reported from fully three-fourths of the counties of the State. Stripping has been unusually widespread for the first brood of worms. Strenuous fights have been made against this brood and much poisoning will be done for the next generation.

Mississippi — R. W. Harned (August 11): Cotton leafworm occurs in practically every county of the State where cotton is grown. Considerable damage is being done in some sections.

Louisiana — T. H. Jones (August 8): Cotton leafworm is causing considerable defoliation of cotton throughout the State. In many sections heavy control measures are being practiced.

Tennessee — G. M. Bentley (August 20): Very phenomenal outbreak of this insect is reported in 24 counties of this State. Every available force is being directed to help farmers to get material and implements for fighting the pest. We have been successful in getting four lots of 25,000 pounds of calcium-arsenate located in the State. Leafworm is very serious, as cotton is fully 10 days or two weeks late and the leafworm about three weeks earlier than usual.

Missouri — L. Haseman (August 17): Cotton leafworm is reported working on cotton in southern Missouri.

Arkansas — B. R. Coad (August 17): Cotton worm is generally distributed over all parts of the State where cotton is grown, damaging crops seriously in several counties.

Texas — M. C. Tanquary (July 23): There was a serious outbreak of the cotton leafworm in the Lower Rio Grande Valley during the first three weeks of July.

F. C. Bishopp (July 27): Cotton leafworm appeared in destructive numbers in certain fields in the vicinity of Dallas about June 23. At that time they were numerous enough to defoliate a considerable acreage. At present there has been very little spread of the species and damage thus far does not amount to much.

COTTON BOLLWORM (Heliothis obsoleta Fab.)

Georgia — W. F. Turner (August 19): This insect has been doing more damage than the boll weevil in some of the northern Georgia counties.

Alabama — B. R. Coad: Heavy bollworm damage is reported in the vicinity of Clayton.

Texas — B. R. Coad: Bollworm is reported from Waco, Gonzales, Temple, and Runge.

COTTON RED SPIDER (Tetranychus telarius L.)

Georgia — W. F. Turner (August 19): This species is seriously affecting cotton at Royston.

Missouri — L. Haseman (August 2): Serious infestations of patches of cotton are reported from Mississippi County.

COTTON APHID (Aphis gossypii Glov.)

South Carolina — B. R. Coad: This pest is reported as present at Chester.

Georgia — J. B. Gill (August 3): The cotton aphid appeared in injurious numbers in cotton fields in some sections of southern Georgia in Mitchell County.

W. F. Turner (August 19): The cotton aphid is serious in Franklin and Floyd Counties. It is most serious in dusted fields but is doing much damage in fields treated with the sirup mixture and in some untreated fields.

New Mexico — W. E. Emery (August 1): The cotton aphid is just commencing to work in the tops of the cotton plants in Dona Ana County.

TOBACCO

TOBACCO FLEA-BEETLE (Epitrix parvula Fab.)

Florida — F. S. Chamberlin (August 6): One late crop of tobacco in Quincy County is badly damaged by this insect.

FOREST AND SHADE-TREE INSECTS

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicen septendecim L.)

BROOD XIV (SEVENTEEN-YEAR RACE)

Massachusetts — A. I. Bourne (July 25): A report from Mr. Hoxie of Hyannis states that on the north side of the Cape they were particularly numerous, especially the last part of June and the early part of July, but as far as the injury to trees of economic value was concerned, the damage was very slight indeed.

Ohio — H. A. Gossard (July 25): The brood of the 17-year locust appeared perhaps a little later than the average season and continued until early July. From the large number of reports now in my hands I judge that the brood was more numerous than in 1906 and that considerably more damage was done to young orchards and to forest trees. Many young orchards were reported to us "Threatened or ruined." While I have not had time to check up fully on the infested territory, I think they appeared in considerable numbers in neighborhoods where they were comparatively sparse 17 years ago.

Indiana J. J. Davis (August 20): Observed injury to oaks and hickories north of Corydon to Corydon Junction, the injury being especially common near Corydon Junction. N. I. Clunie, the County Agricultural Agent, writes that the cicadas were abundant in the north-central part of Harrison County and also in the southeastern part, mentioning especially the vicinity of Laconia. He reports some damage to young orchards.

GIPSY MOTH (Porthetria dispar L.)

Massachusetts A. I. Bourne (July 25): In northern Worcester County, Mr. Calkins reports the gipsy moth as very scarce and as doing less damage than the apple tent caterpillar. Mr. Hoxie of East Sandwich, which is on the Cape, reports that caterpillars do not appear to be anywhere nearly as numerous as last year. Mr. Farrar, of Middlesex County, has found but one gipsy moth caterpillar in his orchard this season. It is very evident therefore that both the gipsy moth and the brown-tail moth are proving considerably less abundant than is normally the case.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

Massachusetts A. I. Bourne (July 25): Mr. Fiske of Lunenburg states that in his orchard the damage was practically nil and the brown-tails were virtually extinct. The same condition prevails in northern Worcester County, where this season Mr. Calkins, reports practically no brown-tails seen this year. Mr. Farrar, of Middlesex County, reports seeing no brown-tail caterpillars or moths this year. They were noted, however, in considerable abundance in the region of Woods Hole, down at the heel of the Cape.

ELM SPANWORM (Ennomos subsignarius Huebn.)

New York R. E. Horsey: The snow-white linden moth is very common near lights July 9, a few still to be found July 13, none last year but a swarm on June 27, 1921, at Rochester.

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

New York V. E. Peterson (July): Spraying for the caterpillar of the tussock moth, which has infested the trees of Buffalo in great numbers, has just been finished. Conditions have been worse this year than for some years previous.

R. E. Horsey (July 17): The white-marked tussock moth was reported very scarce at Rochester, but two horse chestnut trees were found stripped of foliage, perhaps more this year than in 1922, as none were reported last year.

Ohio H. A. Gossard (August 20): The white-marked tussock caterpillar was received August 8, from Geneva on grape and on August 17 from Columbus on plum and elm. This insect has been observed to be numerous in several Ohio localities. It is more plentiful than it has been for some years.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

New York — Henry Bird (August): The serious drought which has prevailed for months has apparently caused insect life to be less abundant than is usual at this time of year. The bagworm, although it occurs scatteringly in somewhat greater numbers than usual at Rye, has not been really abundant. Parasites seem to have held it in check.

C. R. Crosby (August 6): Trees are badly infested at Oyster Bay.

M. D. Leonard (August 8): It is reported that the whole hilltop around the Richmond Country Club grounds is infested. Just what trees are infested was not learned. The Dougan Hills Improvement Society has requested the cooperation of this office in a control campaign next season.

Pennsylvania — T. L. Guyton (August 7): This insect seems very general in the eastern part of this State.

West Virginia — W. E. Rumsey (August 16): Numerous reports from various parts of the State indicate an unusual abundance of this insect.

Georgia — O. I. Snapp (August 17): Bagworms were very numerous and doing considerable damage to cotton in a field at Shellman, Ga.

Ohio — H. A. Gossard (July 25): The common bagworm or basketworm was received from many points in Ohio.

T. H. Parks (August 13): Unusual summer reports have been received of the presence of this insect in central and southern counties. Trees attacked are mostly evergreens, including arborvitae, but it is also present on fruit trees.

E. W. Mendenhall (August 8): The bagworm is doing great damage to trees, especially evergreen trees and shrubbery, in the vicinity of Cincinnati, Ohio.

Indiana — J. J. Davis (August 22): Numerous reports have come from Terre Haute south to the Ohio River, i.e., a little more than the southern third of Indiana. The species occurs principally on arborvitae and other conifers, but some injury is done to deciduous shade trees.

Missouri — L. Haseman: Numerous complaints continue to come in about the bagworms, especially on evergreens.

Texas — F. C. Bishopp (August 25): Bagworms have been very abundant on arborvitae and cedars in certain sections of Dallas County. Some trees have been completely defoliated by the pest.

ARBORVITAE

ARBORVITAE LEAF-MINER (Argyresthia thuiella Pack.)

New York — R. E. Horsey (July 17): Two larvae and one chrysallis of the arborvitae leaf-miner have been found after examination of 35 infested twigs July 2. Little damage is noted except to one tree in Rochester.

BIRCH

BIRCH LEAF-SKELETONIZER (Bucculatrix canadensisella Chamb.)

New York — R. E. Horsey (July 17): The birch leaf-skeletonizer is common on red birch and I suppose elsewhere.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

Ohio — E. W. Mendenhall (August 17): The catalpa sphinx is doing great damage in southwestern Ohio in nurseries and forests. Some spraying and dusting is being done.

ELM

ELM LEAF-MINER (Kaliofenusa ulmi Sund.)

New York — R. E. Horsey (July 17): The elm leaf-miner is rather more common than usual. Some small trees with their leaves badly disfigured are to be found in Highland Park.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

New York — R. E. Horsey (July 17): The elm bark-louse was sprayed on July 6 and 12 while moving. Very little occurs in Highland Park and on streets, but a new infestation has been found in street trees in a nearby section of the city.

New Jersey — R. B. Lott (August 21): This scale has been noted as very plentiful on a row of elms at Bound Brook.

Ohio — H. A. Gossard (July 25): This insect was received from Covington, Columbus, Dayton, Akron, Salem, and Tiffin.

FLATHEADED BORERS

Texas — F. C. Bishopp (August 25): Borers which have been determined by R. A. St. George as Chrysobothris sp. have been unusually abundant under the bark of this year's planting of sycamore and elm trees on the streets of Dallas. Practically 100 per cent of the trees are infested. Often the number of borers in one of these small trees may run as high as 15. The oriental sycamores which are now being tried as shade trees in this section are infested equally

as badly as the native. If it were not for the continual worming of the trees by the city forestry department these borers would bring about the destruction of practically all trees set last spring. A goodly number of borers were also present in two and three-year-old trees, but they seem better able to withstand the attack.

ELM LEAF-BEETLE (Galerucella luteola Muell.)

Massachusetts A. I. Bourne (July 25): One or two cases of infestation of the elm leaf-beetle on elms immediately around Amherst have been observed within the last week. The larvae are practically mature at this time. This is about the first instance of the presence of the beetle in Amherst for a period of about eight or nine years. No reports of serious infestation throughout the State have been brought to our attention, however. The pest is apparently beginning gradually to "come back" after a lapse of several years.

Connecticut Philip Garman (August 23): These beetles are severely damaging trees in Fairfield County, being more abundant than last year.

New York R. E. Horsey (August): A very bad infestation was found in Rochester. The leaves were badly skeletonized and a large number of grubs were at the base of the trees, while a number were still feeding. The first of the month we sprayed about 30 trees here. This insect is slowly spreading but where spraying is thoroughly done can be kept under control. The greatest problem is traffic and the objection of people to having their houses spotted by the spray material.

ELM BORER (Saperda tridentata Oliv.)

Nebraska M. H. Swenk (August 1): Elm trees were reported injured by the elm borer.

ELM APHID (Myzocallis ulmifolii Monell)

Texas F. C. Bishopp (August 25): Some American elms on the streets of Dallas were found to be heavily infested with aphids which were determined by Miss Miriam A. Palmer of the Colorado Experiment Station as M. ulmifolii. The leaves were considerably discolored and spraying with heavy oil emulsions was carried out.

HICKORY

HICKORY BARK-BEETLE (Scolytus quadrispinosus Say)

New York Henry Bird (August): This insect, which in former years badly infested more than 75 per cent of all hickory trees in this section and more than 95 per cent of all of the old trees, is apparently at a very low ebb this season.

LOCUST

LOCUST LEAF-MINER (*Chalepus dorsalis* Thumb.)

New Jersey — R. B. Lott (July 23): Considerable damage occurs on locusts in the neighborhood of Mendham, Morris County.

Ohio — E. Mendenhall (August 8): This insect is reported as very bad throughout southern Ohio and doing considerable damage.

Indiana — J. J. Davis (August 20): The locust leaf-miner is exceedingly abundant in Harrison County on the locust. Trees along roadsides and on hillsides are completely browned from the work of this insect.

MAPLE

WOOLLY MAPLE-LEAF SCALE (*Phenacoccus acericola* King)

New York — R. E. Horsey (July 17): This species is reported as less than usual. Trees were sprayed July 6 or 7 at Rochester.

Ohio — H. A. Gossard (August 20): This insect was received from Lima on August 6 on maple.

SMALL RED HORNED BORER (*Ptilinus ruficornis* Say)

New York — C. R. Crosby (July 11): This species is reported from Clay as injuring soft maple timbers in barn.

COTTON RED SPIDER (*Tetranychus telarius* L.)

New York — M. D. Leonard (August 21): About 50 young trees on the plaza have foliage badly infested at Albany.

OAK

WHITE-BLOTCH OAK LEAF-MINER (*Lithocolletes hamadryella* Clem.)

New York — R. E. Horsey (July 17): This insect is very common and noticeable on small oaks below barns in Highland Park, more than usual.

Ohio — E. Mendenhall (August 8): This insect is quite bad in Hamilton County and doing considerable damage in the forest as well as in the nursery.

H. A. Gossard (August 29): This insect was received from Tiffin on August 7 mining out oak leaves.

PINE

WHITE PINE WEEVIL (*Pissodes strobi* Peck)

New York — F. J. Whaley (August 20): City Forester Whaley reports 4000 to 5000 young trees in forest plantations badly infested, about 5 per cent.

New Jersey R. B. Lott (July): Considerable damage has been reported on an estate at Boonton, Morris County. Almost all Pinus strobus had been attacked on the estate.

POPLAR

VAGABOND GALL-LOUSE (Pemphigus vagabundus Walsh)

Nebraska M. H. Swenk (August 1): Complaints of deformity by the vagabond gall-louse on the cottonwood continued to be received during early August. (August 1): In western Nebraska reports of injury to cottonwood trees by the vagabond gall-louse were received.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Indiana H. F. Dietz (July 18): The light-brown form of oyster-shell scale began laying eggs on July 6. The second brood should appear within the next two weeks. The gray-brown form is in the early third instar at the present time. We have no data on the apple form, which is not serious in this State. In this connection it should be pointed out that the nomenclature for the three different forms of oyster-shell scale, published by Glenn in the Journal of Economic Entomology for April, 1921, should be followed, i. e., the light-brown form, which is two-brooded and which lives on Carolina poplar but cannot maintain itself on apple; the apple form, which is likewise two-brooded and lives on apple but cannot live on Carolina poplar; and the gray-brown form, which is single-brooded but cannot maintain itself on apple, at least in this State.

PALE TUSSOCK MOTH (Halisidota tessellaris S. & A.)

New York R. E. Horsey (August): This insect has given us more trouble than any other pest this month. It is found in all parts of the city wherever the plane tree is planted, as well as in Highland Park. On several streets planted to plane trees the trees were sprayed and we are still at it. In fact, this insect has done fully as much damage to plane trees as the elm leaf-beetle did to elms.

COTTONWOOD LEAF-BEETLE (Lina scripta Fab.)

New Jersey R. B. Lott (August 19): Near New Brunswick this insect is very plentiful on willow and poplar, especially the latter.

Nebraska M. H. Swenk (August 1): In western Nebraska reports of injury to cottonwood trees by the cottonwood leaf-beetle were received. (August 1): Injury to the cottonwood trees in the City Park at Callaway, Custer County, by the cottonwood leaf-beetle was complained of during early August.

SPRUCE

SPRUCE BUDWORM (Cacoecia fumiferana Clem.)

Idaho — J. C. Evendon (July 24): We are positive the spruce budworm is in epidemic form in Bonner, Valley, and Adams Counties. No doubt there are many other regions suffering from the effects of this insect.

SPRUCE CONEWORM (Dioryctria reniculella D. & S.)

Michigan — R. H. Pettit (August 13): This insect destroyed new leaders of many young spruce.

TULIP

TULIP SCALE (Toumeyella liriodendri Gmel.)

West Virginia — W. E. Rumsey (August 16): While commonly present on the tulips, the tulip scale is not usually so abundant or injurious as is the case this year.

Ohio — H. A. Gossard (August 20): This insect was reported from Ironton July 30 attacking tulip tree.

Indiana — J. J. Davis (August 22): The tulip tree scale is a common and conspicuous scale in the southern part of the State.

TULIP SPOT-GALL (Thecodiplosis liriodendri O. S.)

New York — M. D. Leonard (August 17): A large shade tree on the Major Phillips. estate is badly infested at Claverach.

WILLOW

WILLOW CURCULIO (Cryptorhynchus lapathi L.)

Maine — E. M. Patch (July 30): The willow curculio has been reported from Eastport attacking willow trees.

SMALL WILLOW FLEA-BEETLE (Chalcoides helxines L.)

North Dakota — R. L. Webster (August 3): Willow trees in a nursery row are much injured by these beetles.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Texas — F. C. Bishopp (August 25): A heavy infestation of this bug was found about the residences in Dallas on August 20. Most of the bugs were adults, but nymphs of various sizes were present. They seem to be feeding largely upon China berries and were causing considerable trouble by entering houses.

INSECTS ATTACKING GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

GREENHOUSE SOWBUG (Porcellio rathkei Brandt)

Ohio — H. A. Gossard (August 20): The greenhouse sowbug was received from Antwerp August 10, where it was said to be severly attacking greenhouse plants.

COMMON RED SPIDER (Tetranychus telarius L.)

Indiana — H. F. Dietz (July 18): Red spider is becoming a very serious pest on gladiolus, various kinds of beans, and various ornamental shrubs,

Texas — F. C. Bishopp (July 27): The common red spider became very abundant on various types of vegetation during the latter part of June and increased in numbers through July. Late string beans were damaged considerably by it. It was also abundant on ornamental vines and violets.

A GALL MITE (Eriophyes eucrimotes Nalepa)

New York — M. D. Leonard (July 18): This mite is causing galls on leaves of matrimony vine on the Cornell University Campus. Specimens were collected by Stewart H. Burmham, Associate Curator, Department of Botany, Cornell.

NEGRO BUG (Corimelaena pulicaria Germ.)

Nebraska — M. H. Swenk (August 1): In flower gardens the negro bug was quite injurious to cosmos, calliopsis, and other related flowers in Lancaster and Gage Counties.

A SPITTLE INSECT (Philaenus lencophthalmus L.)

New York — A. L. Pierstorff (August 11): This species is common on practically all young trees and shrubs in a nursery at Honeoye Falls.

COLUMBINE

A CURCULIO (Conotrachelus anaglypticus Say)

Ohio — H. A. Gossard (August 20): This insect was received from Seville August 7, where the larvae were reported to be destructive to the stems and roots of cultivated columbine.

DAHLIA

A SCARABAEID BEETLE (Serica parallela Casey)

New York — C. R. Crosby (July 23): At New Rochelle this insect was seriously injuring dahlias in gardens.

M. D. Leonard (August 13): This insect is injuring dahlias, aster, callendulas, young chrysanthemums, and lettuce. The beetles were reported impossible to poison, feeding mostly at night and dropping to the ground upon being disturbed. On August 22, it was not so serious as formerly.

COTTON LEAF-BUG (Adelphocoris rapidus Say)

Ohio — H. A. Gossard (August 20): This insect was received from Plymouth August 11, where it was said to be inflicting severe damage upon the buds of dahlia.

CORN-SILK BEETLE (Lugerodes varicornis Lec.)

Mississippi — R. W. Harned (July 3): Mrs. R. P. Nickels of Steens, Miss., sent specimens of L. varicornis to this office and stated on June 11 as follows: "They are literally destroying my dahlia blooms. I am sending you the dahlias, showing the effect of their being on them just a few hours. They damage roses in the same way." On June 29, she sent more specimens and wrote as follows: "I am sending you more of these bugs that have destroyed every rose and dahlia in my yard, and are now ruining cannas and zinnias. They are everywhere and even come through screens." Complaints were also received from McAdams, Miss., in regard to the same insects attacking flowers.

STALK BORER (Papaipema sp.)

General — C. A. Weigel (July 12): This insect was reported attacking dahlias and foliage plants at Bridgeport, Conn., New York, Baltimore, and Detroit.

TARNISHED PLANT-BUG (Lygus pratensis L.)

Vermont — C. A. Weigel (July 20): A letter was received from Northfield with a report that this insect was damaging dahlias. (July 21): It is damaging dahlias at Riverton.

A LEAF-BEETLE (Nodonota tristis Oliv.)

Virginia — C. A. Weigel (August 18): This insect is reported attacking dahlias at Richmond.

WHEAT THRIPS (Euthrips tritici Fitch and tabaci L.)

Indiana — H. F. Dietz (July 18): The wheat and onion thrips have been unusually serious on gladiolus grown without artificial watering this year.

IRIS

STALK BORER (*Papaipema* sp.)

Pennsylvania — C. A. Weigel (July 23): This insect was reported attacking fleur-de-lis at West Philadelphia.

AN APHID (*Aphis iridis* DeG.)

California — E. O. Essig (August 17): This aphid has been imported from Europe and Asia Minor on *Iris* spp. and is a pest on the roots and crowns of nearly all varieties of cultivated and wild iris in the gardens. It has been hereffor many years, but I have not noticed a report of it.

IRIS BORER (*Macronoctua onusta* Grote)

New York — M. D. Leonard (August 2): Full-grown larvae were received with the report that they were doing considerable damage to a number of iris plants by boring through the stems, at Troy.

Ohio — H. A. Gossard (August 20): A letter from Cincinnati reported the iris borer to be destructive to cultivated iris.

Indiana — H. F. Dietz (July 18): The iris root-borer is a serious pest all over the State wherever iris is grown in ornamental plantings. It is invariably associated with the iris root rot caused by *Bacillus carotovorus*, which completes the destruction begun by the borer. Neither the insect nor the disease has been found alone, and the borer evidently carries the bacteria in its intestinal track.

J. J. Davis (August 22): The iris borer has been unusually prevalent and destructive in Indiana this year.

LILAC

LILAC BORER (*Podosesia syringae* Harris)

New Jersey — R. B. Lott (August 10): This borer has been noticed throughout this State attacking lilacs.

LAPPET MOTH (*Tolype velleda* Comst.)

Ohio — H. A. Gossard (August 20): *Tolype velleda* were received from Massillon July 30 on quince and from Cincinnati August 11 on lilac.

Ips quadriguttatus Fab.

New York — R. E. Horsey (July 17): We found these beetles in borer holes or under the bark of lilacs July 18.

TIGER SWALLOWTAIL (Papilio glaucus v. turnus L.)

Ohio H. A. Gossard (July 25): This species was received from Hiram July 9, attacking lilac.

ROSE

ROSE CURCULIO (Rhynchites bicolor Fab.)

Indiana H. F. Dietz (July 18): This curculio is reported as doing serious damage to the buds of Rosa rugosa at Speedway City June 26.

ROSE SAWFLY (Caliroa aethiops Fab.)

New York P. M. Eastman (August 2): One large rambler rose bush is badly infested by the slugs.

Ohio H. A. Gossard (July 25): Letters quite evidently referring to the rose slug were received from Toledo, Geneva, and Cleveland.

HOLLYHOCK

A STALK BORER (Papaipema cataphracta Grote)

New York C. R. Crosby (July 30): This insect was reported from Gasport destroying many plants.

NYMPHEA ODORATA

WATER LILY APHID (Rhopalosiphum nymphaeae L.)

Massachusetts E. P. Felt (August 16): Large patches of water lilies are heavily infested, in some cases blossoms badly disfigured, at Northboro.

WISTERIA

GIANT SKIPPER (Epargyreus tityrus Fab.)

Ohio H. A. Gossard (August 20): This insect was received from Akron August 13, where it was attacking wisteria.

PIPEVINE

PIPEVINE SWALLOWTAIL CATERPILLAR (Papilio philenor L.)

Ohio H. A. Gossard (August 20): An inquiry from Cleveland asked for control measures for the pipevine swallowtail caterpillars, which were said to be inflicting severe injury on pipevine.

ZINNIAS

STALK BORER (*Papaipema* sp.)

New York — C. A. Weigel (July 29): A letter was received from New York with the report that this insect was attacking flower gardens, chiefly zinnias.

Maryland — C. A. Weigel (July 7): A letter was received from Havre de Grace, Md., where this insect was reported attacking zinnias.

EUONYMUS

EUONYMUS SCALE (*Chionaspis euonymi* Comst.)

New York — R. E. Horsey (July 17): Apparently our radical treatment, spring of 1922, of the evergreen *Euonymus radicans vegeta*, has destroyed the Euonymus scale; we cut the plants to a few inches of the ground and sprayed with scalecide.

New Jersey — R. B. Lott (August 23): This scale has been noted on a large planting at Red Bank, Monmouth County.

INSECTS AFFECTING MAN AND DOMESTIC ANIMALS

MAN

HOUSE FLIES (*Musca domestica* L.)

Connecticut — F. C. Bishopp (June 23): House flies were observed to be fairly numerous in these localities and were causing annoyance by entering residences, restaurants, etc.

MOSQUITOES (Culicidae)

Connecticut — John H. Fay (July 30): Mosquitoes are less abundant in northern Middlesex County than last year.

New York — L. J. W. Jones (August 21): Mosquitoes are not numerous this season on the east side of Rochester.

Florida — F. S. Chamberlin (August 6): This pest is very numerous owing to continued wet weather.

Texas — F. C. Bishopp (July 26): Yellow-fever mosquitoes are becoming fairly numerous in this vicinity (Dallas), and dengue fever is again manifesting itself in Texas. At least five cases have been reported to the Health Department of Dallas, the first occurring about the middle of July. A number of cases have been reported from Denton.

CHIGGERS (Trombicula tlalzahuatl Murray)

Indiana — J. J. Davis (August 22): Chiggers have been as abundant as usual or probably more so.

Texas — F. C. Bishopp (July 25): There has been a marked decrease in the abundance of chiggers during the past few weeks, probably due to high temperatures and lack of rainfall. (August 25): Chiggers appear to be increasing somewhat in number since the recent showers. This is probably due to the mites coming up out of their hiding places and thus becoming more easily picked up.

CATTLE

SCREWWORM (Chrysomyia macellaria Fab.)

New York — F. C. Bishopp (June 28): On June 28, a number of adults of this species were observed in traps and about refuse at an abattoir. This is the first appearance of this species in the vicinity.

Texas — D. C. Parman (July 21): Cases of worms were quite numerous in sheep the first of the month (10 per cent), cattle showing about 2 per cent. The adults have at no time during the month been very abundant. At the end of the month one is rarely observed and cases are much fewer.

F. C. Bishopp and E. W. Laake (July 24): Flies about packing houses have been greatly decreased in numbers and are causing very little annoyance. Chrysomya macellaria predominates, with house flies second in number and a few Lucilias. Apparently Phormia regina and Calliphora spp. have disappeared.

HORN FLY (Haematobia irritans L.)

New Hampshire — F. C. Bishopp (June 25): Beef cattle on pasture here were observed to be seriously annoyed by horn flies. The average number per animal was about 600, the maximum about 1,000.

New York — F. C. Bishopp (June 28): Horn flies are causing considerable annoyance to dairy cattle in this vicinity. Some animals have approximately 1,000 flies upon them, and the average will no doubt run 300.

Texas — F. C. Bishopp (August 25): Horn flies are relatively scarce at this time. They have not caused serious annoyance to stock since the beginning of the hot dry weather about the first of July.

Ohio, Indiana, Missouri and Oklahoma — F. C. Bishopp (July 1): Livestock of all classes are being annoyed to a considerable extent by stables flies, though their number is probably not greatly in excess of the normal.

Nebraska M. H. Swenk (August 1): The pest of stable flies mentioned in the July report continues. During the entire month of July there has been an almost unprecedented abundance of the stable fly. The trouble is State-wide, reports of great annoyance to live stock by these flies having been received from 31 different counties, representing all parts of the State. Serious losses from a shortened milk supply among dairy cattle, lack of gain among cattle on feed and range cattle, and much difficulty of working horses in the field have been reported as a consequence.

OX WARBLE (Hypoderma lineatum DeVill.)

Texas F. C. Bishopp (August 25): O. G. Babcock reports the finding of third and fourth-stage larvae of H. lineatum in the backs of cattle in the vicinity of Sonora. This is exceptionally early for the appearance of this pest, even in the plateau region, where it normally appears in the backs of cattle almost two months earlier than in the vicinity of Dallas.

THROAT BOT-FLY (Gastrophilus nasalis L.)

Texas F. C. Bishopp (August 25): The throat bot-fly has been causing some annoyance to horses during the last three weeks, but the common bot-fly, G. intestinalis, is not yet in evidence.

A HORSE-FLY (Tabanus lasiophthalmus Macq.)

New Hampshire F. C. Bishopp (June 25): Cattle in the vicinity of Durham are being considerably worried by tabanids, with the above species predominating. As many as 15 specimens were observed attacking an animal at one time.

POULTRY

FOWL TICK (Argas miniatus Koch)

Texas D. C. Parman (July 21): The heavy infestations of early spring at Uvalde have been checked somewhat, but the loss in most flocks has been above 5 per cent and in some as high as 50 per cent. A probable average would be about 8 per cent during the last two months.

O. G. Babcock (August 15): The fowl tick is on the increase at Sonora, and is more numerous than for several months. Many reports are coming in with regard to this pest. Control and eradicative measures are being put into practice.

INSECTS INFESTING HOUSES AND PREMISES

TERMITES (*Reticulitermes flavipes* Kol.)

Indiana — J. J. Davis (August 22): Termites seem to be more and more destructive farther north each year. This year we found a very serious infestation in a dwelling at Buck Creek, 10 miles north of La Fayette. The house had to be completely rebuilt in parts. We have also had reports of injury to napkins and other linens by this insect.

CRICKETS (Gryllidae)

Indiana — J. J. Davis (August 22): Crickets were so annoying in a dwelling at Gary that control measures were requested.

SCORPIONS

Texas — F. C. Bishopp (July 25): Scorpions have been reported in a number of residences, especially of brick and stone construction.