

THE INSECT PEST SURVEY
BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR OCTOBER, 1931

Despite the very late appearance of the cotton leaf worm in the Gulf Region, the moths of this insect did some damage to fruit in central Missouri and southeastern Nebraska. The only other records we have of flights of the moths into the North was a report from Michigan that a single specimen was collected on October 21 at Shelby.

The plains false wireworm is doing considerable damage to the newly planted wheat in western Kansas.

The Asiatic beetle severely damaged lawns at points in Connecticut and New York.

Soil surveys made during September indicate that the Japanese beetle infestation is definitely heavier than it was this spring in the Moores-town district in New Jersey, and in the Jenkintown district in Pennsylvania. These surveys further indicate that this insect is generally distributed as far northward as Plainfield and Metuchen, N. J., with localized colonies beyond this region.

Grubs of the scarabæid Ochrosidia villosa Burn. were reported as having very seriously damaged the turf on the fairways of a country club at Bayside, and lawns at Lawrence and Woodmere in New York. We also have a report of a lawn being ruined by this insect in the suburbs of Washington, D. C.

In the East Central States an unusually heavy emergence of the Hessian fly occurred in September. In most places, however, this was too early to infest the wheat sown after the fly-free date. Volunteer wheat, though scarce, is heavily infested.

The corn ear worm persisted extremely late in the Northern States. In Maine this insect was more numerous than has been observed in the past ten years, and similar reports of unprecedented infestations occurred as far west as Wisconsin, Minnesota, South Dakota, and Iowa. It not only damaged late sweet corn but also ate the mature field corn and did very considerable damage by entering greenhouses, where the larvae attacked practically all forcing plants.

The chinch bug maintained a population in the East Central States of such proportions that the number of bugs going into hibernation is distinctly alarming. This insect has also been reported from east-central Pennsylvania.

The fall armyworm was reported during the last few days in September from the lower Gulf region in Louisiana, where it was damaging soybeans and sugarcane. This insect was also reported as a pest to flowers growing under glass in Michigan.

At harvest time side-sting injury by the codling moth was observed to be unusually prevalent throughout New England and the Middle Atlantic States. Similar injury extended across the lake region into Minnesota and Iowa.

Apple leafhoppers were so prevalent at harvest time in the orchards of New England, the Middle Atlantic States southward to Virginia, and the East Central States westward to Illinois and Kentucky, that these insects, in addition to specking the fruit, were a very decided nuisance to the pickers.

The citrus whitefly was reported as quite generally abundant from Georgia and Florida to Mississippi.

Along the Atlantic seaboard, from Virginia southward to South Carolina and Alabama, the cabbage webworm has been doing very appreciable damage to cruciferous crops. This insect is also occurring in damaging numbers on cauliflower in southern California.

The pickle worm, during late fall, appeared in the Middle Atlantic and New England States in greater numbers than it has in many years. The first record of this insect as a pest in Connecticut was made this year. The insect was so numerous that practically no squash was harvested in the Charleston section of South Carolina, and many fields of late cucumbers were completely ruined in north-central Florida.

The cabbage looper is reported as damaging spinach in Ohio and Pennsylvania.

The birch skeletonizer is heavily defoliating birch in Maine, New Hampshire, and northeastern New York. This insect has also been reported from Wisconsin and Minnesota. The birch leaf-mining sawfly is also seriously infesting birch from Maine to northern New York.

The boxelder bug is very unusually prevalent in Virginia, Maryland, and Delaware. This insect is also reported as very prevalent in the East Central States, West Central States, Utah, and Washington.

Damage to azaleas and rhododendrons by white grubs is becoming increasingly prevalent in southern Alabama where these plants are used very extensively as ornamentals.

The European thrips Taeniothrips atratus montanus Priesner is recorded for the first time in the United States. It was found this summer on gladiolus at Longmeadow, Mass.

G E N E R A L F E E D E R S

GRASSHOPPERS (Acrididae)

- Florida F. S. Chamberlin (October 8): Grasshoppers, mainly Melanoplus sp., are more abundant than usual in Gadsden County for this season of the year.
- J. R. Watson (October 25): Grasshoppers are moderately abundant and are doing considerable damage to young citrus trees in the northern and central parts of Florida.
- Indiana J. J. Davis (October 24): Grasshoppers were reported abundant and destructive in tomato fields at Sulphur Springs, Henry County, October 7.
- Illinois W. P. Flint (October 24): While grasshoppers were only slightly more abundant than usual in the State this year, they have had ideal conditions for egg laying during the fall and we anticipate serious damage next year.
- Tennessee C. Benton (September): Grasshoppers are locally abundant near Fayetteville but no commercial damage has been reported, largely owing to the fact that on account of drought the usual September plantings of small grain and legumes were not made. Much volunteer wheat has been eaten up by them.
- Wisconsin E. L. Chambers (October 27): Grasshoppers are moderately abundant but still quite numerous in certain sections.
- Minnesota A. G. Ruggles (September 26): Grasshoppers are gradually dying off, but egg laying continues by those left, on sides of roads, ditch banks and edges of fields, and parts of pastures are filled with eggs in the infested area of the Red River Valley. Adults are still numerous enough around Stephen to eat off several acres of fall rye down below the surface of the ground. We can not see what will prevent a big outbreak in 1932.
- Oklahoma C. F. Stiles (October 28): Most of the grasshoppers have laid their eggs and disappeared from Oklahoma. With favorable weather for development of grasshoppers, we may expect a serious outbreak in central and southwestern Oklahoma next year.
- South Dakota H. C. Severin (October): We have not had a killing frost as yet, and surviving grasshoppers are still laying eggs. The species surviving in largest numbers are M. differentialis Thos., M. mexicanus mexicanus Sauss., and M. femur-rubrum DeG. M. bivittatus Say is an earlier species, and while it was the most harmful of the four mentioned, it began to die off late in August, and only a few survive at present. An immense number of eggs are found in the ground in the areas that were badly

damaged this year, while in much of the remainder of the State the eggs are sufficiently abundant to cause alarm. If weather conditions will favor the grasshoppers this winter and next spring, the damaged area in South Dakota promises to be much increased.

Iowa H. E. Jaques (October 25): Grasshoppers have been moderately abundant in many parts of the State. Many may still be found. Late garden crops and other vegetation has suffered from them.

Missouri L. Haseman (October 22): The red-legged and differential grasshoppers have continued in goodly numbers, ovipositing up to the middle of October.

Kansas H. R. Bryson (October 24): Grasshoppers are moderately abundant in most sections of the State. Practically no damage has been reported during the past month.

Nebraska M. H. Swenk (October 24): Grasshoppers have largely disappeared now, having laid eggs.

Mississippi C. Lyle and assistants (October): The only report of grasshopper damage during October was to soybeans at Cruger. (Abstract, J.A.H.)

COTTON LEAF WORM (Alabama argillacea Hbn.)

Michigan R. H. Pettit (October 24): A single specimen was taken on or about October 21 at Shelby. This constitutes the sole record for this year up to the present time in Michigan.

Missouri L. Haseman (October 22): Cotton leaf worm moths have continued abundant and injurious to fruit at Columbia all this month.

Nebraska M. H. Swenk (October 26): A small flight of moths reached Nebraska during the first week in October, and were complained of at that time as damaging ripe peaches in Cass County.

Mississippi C. Lyle and assistants (October): The cotton leaf worm is unusually scarce throughout the State this year, the infestations being so light that no control measures were found necessary. (Abstract, J.A.H.)

WHITE GRUBS (Phyllophaga spp.)

West Virginia L. M. Peairs (October 24): White grubs are very abundant in lawns at Parkersburg.

Ohio T. H. Parks (October 24): Several complaints reached this office during September of white grub injury occurring to lawns in Columbus.

- Minnesota A. A. Granovsky (September 27): White grubs are very abundant. A few lawns in Minneapolis are badly infested with Brood B larvae.
- Missouri L. Haseman (October 22): White grubs are reported at Columbia. Still abundant in first 6 inches of surface soil.
- Nebraska M. H. Swenk (October 26): White grubs continued to be observed actively feeding until about October 23.

WIREWORMS (Elateridae)

- Pennsylvania C. A. Thomas (October 20): Wireworms caused considerable injury to potato tubers on several farms in Pennsylvania this summer, reports coming from Erie, Crawford, Huntingdon, Lycoming, Chester, and Bucks Counties. In southeastern Pennsylvania the chief injury was by larvae of Pheletes agonus Say while in Erie County a Melanotus larva was the chief offender.
- Indiana J. J. Davis (October 24): Wireworms were serious pests of potatoes in several localities near Evansville according to report sent October 17.
- Mississippi State Plant Board (October 26): Wireworm injury to sweet-potato tubers has been reported during October as rather serious in Jackson, Monroe, Lauderdale, Rankin, Copiah, and Bolivar Counties.
- Oklahoma C. F. Stiles (October 28): Wireworms are damaging some fields of wheat in Alfalfa County.
- California E. O. Essig (September 28): Wireworms are moderately abundant.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

- Kansas H. R. Bryson (October 24): The false wireworm has been doing considerable damage in the western part of the State. Owing to the dry summer and an extended dry fall, the larvae have had the advantage of a long feeding period. Wheat sown in September has not had sufficient moisture to insure its germination, hence much damage has been done. A few reports of 100 per cent damage in some fields have been received. Reports in correspondence have been received from Copeland, Delphor, Johnson, Healy, and Hoxie, Kans. At the time of this writing no temperatures sufficiently low to force the larvae down into the soil for the winter have occurred.

ASIATIC GARDEN BEETLE (Aserica castanea Arrow)

- New York and Pennsylvania C. H. Hadley and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): This beetle has caused more turf injury during the fall than during any previous year since the investigation was started in 1927. This injury occurs on the lawns in the northern

half of Nassau County on Long Island. Although adults are still to be found in the field, they are scarce.

During the month a total of 139 soil surveys of one square foot each were made at Chestnut Hill, Pa. An average of 8 grubs to the square foot was found with a range of 0 to 93.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut

R. B. Friend (October 24): Several lawns in the Westville section showed severe injury this month, but in the center of the infested area the insect is less abundant. A severe infestation appeared this year about $1\frac{1}{2}$ miles outside the quarantined area. The insect is not spreading rapidly.

New York

C. E. Hadley and assistants (U.S.D.A. Japanese Beetle Laboratory) (September): The turf injury at Jericho, reported in August has spread so that it now covers about three-fourths of an acre. The grubs have also attacked a strawberry bed (approximately 2,000 square feet in size) at the same place and destroyed 60 per cent of the plants.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey

and
Pennsylvania

C. H. Hadley and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): Comprehensive soil surveys made in golf courses at Moorestown, N. J., and Jenkintown, Pa., show that the grub infestation is definitely heavier than it was this past spring. Field work on the distribution of the adult Japanese beetle was continued during the first week of September, during which time the region extending from New Brunswick north to Hackensack, Paterson, and Newark was scouted. The results obtained indicated the extension northward of the region of continuous occurrence as far as Plainfield and Metuchen, and beyond these points, the presence of usually highly localized colonies of the beetle in many of the cities and towns occupying the belt of low country east of the Watchung Mountains.

A SCARABÆID BEETLE (Ochrosidia villosa Burm.)

New York

C. H. Hadley and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): Ochrosidia villosa: In the fairways of a golf club at Bayside, N. Y., approximately 1 acre of turf was destroyed. The ruined turf was in irregular spots which were widely separated in different parts of the course. At Lawrence, N.Y., one-fourth of an acre of lawn turf was entirely destroyed so that dead brown sod could be easily rolled back. At Woodmere, N.Y., 300 square feet of lawn was ruined.

Maryland F. L. Campbell (October 1): Toward the end of September this insect was observed in very great abundance in the Rock Creek Park section of Washington, D. C., where it had completely destroyed a recently sodded lawn.

COMMON RED SPIDER (Tetranychus telarius L.)

Ohio E. W. Mendenhall (October 21): The red spider mites are very bad on arborvitae evergreens in a nursery near New Carlisle. Evergreens in one of the nurseries in Ashland are badly infested.

Minnesota A. G. Ruggles (September 26): Red spiders are very abundant on raspberries, zinnias, apples, etc., throughout the State.

Utah G. F. Knowlton (October 13): Red spiders are still damaging sugar beets in many Cache Valley fields.

Washington M. A. Yothers (October): During the season the common red spider has been the most abundant and injurious the orchardists can recall in the Wenatchee district. It has been particularly injurious to the Delicious apple trees (foliage and fruit). The unusually mild winter of 1929-30, the early spring, and the mild, dry summer were doubtless conducive to maximum development of this pest.

In migrating to the soil in late summer and early fall countless numbers of the mites were caught and killed in the chemically-treated codling moth bands and in tree tanglefoot bands placed about the tree trunks.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Ohio T. H. Parks (October 25): Nearly all eggs were hatched by October 25 and the newly emerged larvae were found attached to the stalk under the leaf-sheath. Infestation exists at Columbus in wheat sown immediately after the recognized fly-free date. October was warm and late-sown wheat is getting a good start. The majority of the fields are free from infestation. In this part of Ohio practically no wheat was sown before the safe sowing dates.
- Indiana C. M. Packard (October 5): Volunteer wheat from Logansport to Evansville has 50 to 75 per cent of the stems infested. The fly is largely in the flaxseed stage, with about 15 per cent pupating. A few eggs and some newly hatched larvae are present. Volunteer wheat is not very abundant. Not much sown wheat was above ground by the last of September.
- Illinois W. P. Flint (October 24): An unusually heavy emergence occurred late in September. In many of the counties lightly infested at the time of stubble survey, the fly is now numerous enough to lay large numbers of eggs on volunteer and early-sown wheat. From the information at hand, wheat sown on the recommended fly-free dates has escaped any serious infestation.
- J. H. Bigger (October 13): Adults were numerous the last week in September extending to about October 7 and 8. Examinations on October 9 and 10 show:
- Four fields seeded before October 2---60.4 per cent
 with eggs
 Two fields seeded after October 7---7.5 per cent
 with eggs
 Recommended date of seeding in this(Morgan)County
 October 2
- Michigan R. Hutson (October 23): The Hessian fly is moderately abundant.
- Iowa H. E. Jaques (October 25): The Hessian fly is moderately abundant in Monroe County.
- Missouri L. Haseman (October 22): Very little Hessian fly in experimental plats at Columbia; no complaints from farmers.

Tennessee C. Benton (September 28): There is a light infestation in volunteer wheat in the vicinity of Fayetteville. Mostly in puparial stage, but a few eggs and newly hatched larvae. Slight pupation in both stubble and volunteer grain. Hot, dry weather has prevented most of the usual sowing of small grains for fall and winter pasture.

Nebraska M. H. Swenk (September): The summers and falls of 1930 and 1931 were so hot and dry in eastern Nebraska that the Hessian fly was affected adversely, and in September, 1931, no special menace of an outbreak seemed to be present. Evidences of the fly in moderate amounts were reported from Nemaha, Otoe, Colfax, and Dawson Counties during the month.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Missouri L. Haseman (October 22): The joint worm of wheat was reported from Polk County.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

Maine C. R. Phipps (October 26): The corn ear worm is very abundant throughout the State. The largest number for 10 years have been sent in.

New Hampshire L. C. Glover (October 23): The corn ear worm is moderately abundant.

Massachusetts A. I. Bourne (October 26): The corn ear worm was, as usual, quite abundant on late harvested corn. The unusual interest in this species can be explained partly on the basis of the interest in corn insects of all sorts by the extension of the European corn borer quarantine, which caused growers to scrutinize their corn more carefully than would otherwise have been the case. At the same time, however, from our own observation we were led to believe that there was rather more injury from this species than is usually the case.

Connecticut W. E. Britton (October 24): The corn ear worm is abundant in all portions of the State.

Rhode Island A. E. Stene (October 21): The corn ear worm is moderately abundant.

New York P. J. Parrott (October 23): The corn ear worm is moderately abundant in the western part of the State.

P. M. Eastman (October 14): The corn ear worm has been reported as doing considerable damage in plats of sweet corn in the vicinity of Millbrook and Stockport.

Pennsylvania T. L. Guyton (October 22): The corn ear worm is moderately abundant and general over the eastern part of Pennsylvania.

West Virginia L. M. Peairs (October 24): Corn ear worms are very abundant at Morgantown. Much injury up to harvest.

F. W. Craig (October 5): Corn ear worms were very bad in Mason County.

Virginia H. G. Walker (October 27): The corn ear worm is very abundant on snapbeans in Norfolk.

Florida J. R. Watson (October 25): The corn ear worm is moderately abundant and is feeding mostly on seeds of beggarweed.

Indiana J. J. Davis (October 24): Corn ear worms have been unusually abundant. From Mt. Vernon, September 28, report comes that this insect ruined all of the late sweet corn. Similar reports could be given for many other sections of the State. October 17 to 20, reports were received from Monticello, Rensselaer, LaPorte, and Lafayette, of large numbers of earworms in alfalfa fields, and apparently causing appreciable damage. Ear worms were reported abundant and destructive in tomato fields at Sulphur Springs, Henry County, October 7.

Illinois W. P. Flint (October 24): A heavy flight of adults has continued. Several reports of damage to alfalfa (newly sown) have been received.

J. H. Bigger (September 15): Corn ear worms are very abundant in central and west-central Illinois. From 30 to 35 per cent of the ears in six central counties are infested.

Kentucky W. A. Price (October 24): The corn ear worms are still feeding on corn that is ready to go into the crib. They are tunneling the kernels, feeding on the germ. Much damage is caused by the activity as all kernels so eaten fall off the cob and are a total loss. Also the worms continue to be troublesome in dahlias at Lancaster, Lexington, and Owensboro.

Michigan R. Hutson (October 23): The corn ear worm is very abundant; there are large numbers of moths.

- Wisconsin E. L. Chambers (October 26): One of the heaviest infestations for many years appeared in Wisconsin this summer, continuing to be active very late owing to no killing frost to date. Several fields of pop corn and sweet-corn showed 100 per cent infestation. Several rose houses and one chrysanthemum house were heavily infested in Milwaukee County.
- South Dakota H. L. Severin (October 20): The corn ear worm was very abundant this year. Corn was largely a failure over South Dakota and almost everywhere the ear worm was reported as abundant in the corn produced.
- Iowa H. E. Jaques (October 25): The corn ear worm has been the outstanding insect pest during October. It has been unusually abundant throughout most of the State.
- Missouri L. Haseman (October 22): The corn ear worm has continued very abundant and is still feeding in late corn, tomatoes, and beans, and on foliage of plants.
- Kansas H. R. Bryson (October 24): The corn ear worm is moderately abundant.
- Mississippi C. Lyle and assistants (October): Rather severe damage to late tomatoes was reported from central and northern Mississippi. (Abstract, J.A.H.)
- California S. Lockwood (October 5): The corn ear worm has been more than normally abundant this fall. The trouble has extended as far north as Monterey County, where the worm has attacked lettuce and tomatoes. It has also been injurious to tomatoes in Contra Costa County.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

- Virginia C. R. Willey (October 23): Specimens were sent in from King and Queen County. (September 28) There are reports that about 3 acres of a 20-acre field were destroyed by this pest.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- Connecticut W. E. Britton (October 24): A recent survey shows a rather heavy infestation of stalks in East Lyme, Groton, New London, and Old Lyme, with lesser infestations throughout New London, Windham, and Middlesex, and portions of Hartford and New Haven Counties. The survey did not cover the other portions of the State.

- Rhode Island A. E. Stene (October 21): The European corn borer is moderately abundant.
- Pennsylvania H. N. Worthley (October 2): The European corn borer has increased in abundance around State College this year.
- Ohio E. W. Mendenhall (October 21): Some damage is reported in the northwestern counties of the State, especially near Toledo. It shows that the pest is increasing.

CHINCH BUG (Blissus leucopterus Say)

- Pennsylvania T. L. Guyton (October 7): Chinch bugs have been reported in Sudan grass in Catawissa, and they also have been reported doing damage to corn, oats, and young grass.
- Illinois W. P. Flint (October 24): The chinch bug population in the central part of the State has built up very strongly during the latter part of the summer. At present there are enough bugs in hibernation so that we will have serious damage extending from McLean and Hancock Counties, on the north, southward to Washington, St. Clair, and Jefferson Counties on the south.
- J. H. Bigger (October 13): Chinch bugs have been flying into hibernation in western counties. A recent survey has indicated wide spread this season north and west to Bloomington and Jacksonville.
- Ohio T. H. Parks (October 24): The chinch bug is moderately abundant only in the northern and western counties.
- J. S. Houser (October 5): Chinch bugs have caused serious damage to bluegrass in lawns in Canton.
- Iowa H. E. Jaques (October 25): The chinch bug is moderately abundant in Des Moines County.
- Missouri L. Hasenan (October 22): Chinch bugs in dangerous numbers went into winter quarters in a few counties of the northwestern quarter of the State.
- Tennessee C. Benton (September 30): Some numbers of the second and fourth instar nymphs were observed in volunteer wheat 4 miles north of Fayetteville.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

- Illinois J. H. Bigger (September 15): The corn flea beetle was noted as abundant in cornfields the last of August and the first part of September.

ALFALFA

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Mississippi C. Lyle and assistants (October): The three-cornered alfalfa hopper was reported in Bolivar and Washington Counties. Damage still very noticeable. (G. I. Worthington)

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

Mississippi G. I. Worthington (October 19): The sorghum webworm was found damaging heads of sagrain in Washington County.

GARDEN WEBWORM (Loxotege similalis Guen.)

Indiana J. J. Davis (October 24): The garden webworm was abundant in alfalfa at Mt. Vernon, October 5.

SOYBEAN

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana W. A. Douglas (September 29): The first injury to soybeans was found on September 15. The infestation is at present very light and it is not expected that control measures will be necessary, as most varieties of soybeans are practically mature. This insect has appeared later each year since the first appearance in 1929 and each year the injury has been less severe.

GRASS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Michigan R. Hutson (October 23): L. frugiperda is destructive in greenhouses all over southern Michigan and the larvae are working upon overbearing strawberry in southwestern Michigan.

Louisiana W. A. Douglas (September 29): The southern grass worm is doing some injury to soybeans. The infestation at this time is light.

J. W. Ingram and E. K. Bynum (September 29): Larvae were observed in large numbers injuring planted sugarcane near Houma during September.

Mississippi State Plant Board, Press Release (October 26): The southern grass worm, which was so abundant in the fall of 1930, was conspicuous by its absence this year, being reported abundant in only one case in Attala County.

California S. Lockwood (July 27): This noctuid larva has been responsible for very severe damage to field and sweet corn on about 1,000 acres in the Mission and Tia Juana valleys of San Diego County. Reports have come to this office that seem to indicate that this same condition exists in parts of Los Angeles County. The later sweet corn will be entirely ruined and the tonnage of the field corn will be cut severely. It is not uncommon to find as high as four or five worms to one corn plant. (October 5): This insect has been more than normally abundant this fall. The trouble has extended as far north as Monterey County, where this worm has attacked lettuce and tomatoes.

WEBWORMS (Crambus spp.)

Ohio J. S. Houser (October 5): There were very heavy catches of crambids in light traps throughout most of September.

Indiana J. J. Davis (October 24): Webworms continued to be occasionally reported. Small worms, probably of the third seasonal generation, were damaging lawns at Bluffton (October 3) and Connersville (October 12). The underground tubers of carrots were seriously eaten into by a webworm at Ft. Wayne, October 5. Adults have not yet been reared.

W. B. Noble (September 21): Half-grown larvae are abundant in greens on a golf course near Lafayette, also common in one other grassy area examined, but in these locations most of the larvae were dead; apparently killed by bacterial diseases, the hot humid weather during most of September having been favorable to such a development. Possibly these diseases near the end of the past season's outbreak and may be an important reason why such outbreaks are so infrequent.

Illinois W. P. Flint (October 24): Several cases of damage in greenhouses have been reported during the past two weeks.

J. H. Bigger (October 13): Sod webworms, C. trisectus Walk., flew in large numbers in western Illinois during the period of August 20 to September 1, or after.

Kentucky M. L. Didlake (August 25): Specimens collected in Fayette County, August, have been identified as C. mutabilis Glen. and C. teterrellus Zinck. Specimens reared in the laboratory from worms collected in Fayette County, July 15, as C. trisectus Walk. and C. teterrellus Zinck.

Correction: The note by W. A. Price on Crambus spp. in Kentucky in the Insect Pest Survey Bulletin, Vol. 11, No. 6, p. 346, should end with the next to the last sentence. The last sentence refers to damage by Jalysus spinosus.

A TIGER MOTH (Apantesis phyllira Drury)

Tennessee

C. Benton (September): No commercial damage noted in southern Tennessee, but the third-brood larvae were rather common in early September near Fayetteville, and especially plentiful in Marshall County south of Lewisburg. Pupae were common in the latter vicinity September 9. A few moths were taken at lights in Fayetteville, September 10 - 20.

A DIGGER BEE (Andrena asteris Robertson)

West Virginia

E. W. Craig (October 2): A digger bee was reported attacking a lawn at Charleston on October 2. The soil was of the sandy type along a terrace on the river bottom. One small lawn was honey-combed with burrows and piles of sand so thick that they overlapped and bees were in a swarm overhead. Neighboring lawns have a few also. (Det. by G. A. Sandhouse, Oct. 23.)

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

J. W. Ingram and E. K. Bynum (September 29): Infestations in sugarcane showed a normal increase during the month of September. At the end of the month the infestations ranged from about 5 per cent to 80 per cent bored stalks.

SUGARCANE BEETLE (Euotheola rugiceps Lec.)

Louisiana

W. A. Douglas (September 29): Out of 800 stubs examined, 24 were found to have been injured, which gives an average of 3 per cent injury. The sugarcane beetle injury and stalk borer injury are seldom found on the same stalk.

Alabama

J. M. Robinson (October 21): The sugarcane borer is moderately abundant on strawberries at Center.

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

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

- Massachusetts A. I. Bourne (October 26): The codling moth again caused a considerable amount of injury. This was almost entirely confined to late stings by late second-brood worms. The second brood was of considerable size.
- Connecticut W. E. Britton (October 24): The codling moth is moderately abundant.
- New York P. J. Parrot (October 23): The codling moth is very abundant in the western part of the State.
- Delaware L. A. Stearns (October 23): Late-season injury by the codling moth is reported light.
- Pennsylvania T. L. Guyton (October 1): The codling moth is moderately abundant in Franklin County.
- H. N. Worthley (October 26): Late second-brood worms are less abundant than in 1930 at State College. It is moderately abundant at Biglerville, Adams County, where there is heavy damage in some orchards.
- Maryland E. N. Cory (October 22): The codling moth is moderately abundant.
- West Virginia L. M. Peairs (October 24): Heavy injury by the codling moth has been reported from all sections of the State.
- Virginia W. J. Schoene (October 26): The codling moth is moderately abundant in Roanoke. The apple growers in the commercial sections of the Shenandoah Valley and in and about Roanoke reported a large number of stings on fruit but very few codling moth worms. It is believed that the stings were caused by a large carry-over from last year.
- Georgia C. E. Alden (October 23): Larvae in winter cases are very abundant.
- Ohio T. H. Parks (October 24): In spite of the year being very favorable and a high larval population to begin with last spring, this insect has been well controlled in most commercial orchards. There was a very small third generation in Lawrence County compared with last season. There are numerous stings on fruit on the hill orchards, but few live worms have survived the spray program. The growers have made a big effort to control the insect and did more thorough summer spraying than ever before.

- Indiana J. J. Davis (October 24): The codling moth is moderately abundant.
- Michigan R. Hutson (October 23): On September 29, Mr. H. J. Lurkins, County Agent of Berrien County, brought to my attention 10 Hale peaches which a farmer living in his county had brought in. These peaches were infested with codling moth larvae and the grower reported a noticeable loss.
- Minnesota A. G. Ruggles (September 26): The codling moth is very abundant in apple sections of the State. More side injury than usual.
- Iowa H. E. Jaques (October 25): The codling moth is very abundant in unsprayed orchards.
- Missouri L. Haseman (October 22): Control of the codling moth is quite satisfactory in the northern half of the State. Not so generally satisfactory in southern part of State.
- Utah G. F. Knowlton (October 21): The codling moth is very abundant. There is considerable damage, partly due to the light crop of apples.
- Washington M. A. Yothers (October): Infestation the past season has been greater than for many years, according to reports of orchardists, county agricultural agents, and fruit company field men.
- Oregon D. C. Mote (September): B. G. Thompson reports that activity has ceased in the Willamette Valley. No eggs have been laid since the first week in September. Approximately 95 per cent of the apples are wormy on unsprayed plots.
- California E. O. Essig (September 28): The codling moth is moderately abundant.
- FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)
- California E. O. Essig (September 28): The fruit tree leaf roller is scarce.
- EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)
- New York P. J. Parrott (September 30): The eye-spotted budmoth is very abundant in western New York.
- PISTOL CASE BEARER (Coleophora malivorella Riley)
- West Virginia L. M. Peairs (October 24): The pistol case bearer is reported from the Eastern Panhandle; it shows considerable spread.

APPLE LEAF SKELETONIZER (Psorosina hammondi Riley)

Kentucky

W. A. Price (October 24): The apple leaf skeletonizer was reported doing damage in several orchards at Paducah.

LESSER APPLE WORM (Lasneyresia prunivora Walsh)

Connecticut

M. P. Zappe (October 24): The lesser apple worm is very abundant on late apples (Baldwin and Greening). Baldwins from one orchard in Hamden had 14 per cent of the apples injured. Usually this insect is not important.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Massachusetts

A. I. Bourne (October 26): The apple curculio continued to be a rather serious pest of apples, particularly in the hill towns west of the Connecticut River.

Minnesota

A. G. Ruggles (September 26): The apple curculio did considerable damage at La Crescent.

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

Ohio

J. S. Houser (October 5): There have been many more records of damage from the round-headed apple tree borer than usual. One orchard was found near Danbury in which practically every tree was damaged.

Missouri

L. Haseman (October 22): At Columbia round-headed apple-tree borers which hatched this summer are (October 20) seemingly half grown and are mostly entering the wood for wintering. Very abundant and destructive.

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

Missouri

L. Haseman (October 22): The flat-headed apple-tree borer is unusually abundant in winter tunnels. They seem to be heavily parasitized.

Mississippi

C. Lyle (October 22): On October 15 a correspondent at Sebastopol reported severe injury to young pecan trees by the flat-headed apple-tree borer.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Utah

G. F. Knowlton (October 13): The woolly apple aphid has been moderately abundant on apple trees all the season.

Washington

M. A. Yothers (October): The woolly apple aphid is still observed in great abundance in some orchards in Wenatchee, but is pretty well eliminated by predacious enemies in others. The presence of this insect in such great numbers, particularly

upon the water sprouts in the center of apple trees, is so obnoxious to pickers that orchardists have to cut out the center twigs and sprouts previous to harvesting.

ROSY APPLE APHID (Amuraphis roseus Baker)

New York P. J. Parrott (October 23): The rosy aphid is moderately abundant in the western part of the State.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Pennsylvania E. P. Felt (October 23): The buffalo treehopper, or a closely related species, severely injured apple branches in the Philadelphia area. In one case the egg scars were nearly contiguous.

Washington M. A. Yothers (October): The buffalo treehopper, the green clover treehopper, and occasionally other species continue to do great injury to young apple and pear trees in alfalfa-cover-cropped orchards.

APPLE LEAFHOPPERS (Cicadellidae)

Massachusetts A. I. Bourne (October 26): Apple leafhoppers late in August and throughout September were very abundant quite generally over the State, particularly in orchards in the eastern and southeastern counties where there was considerable bleaching of the foliage and spotting of the fruit.

Connecticut W. E. Britton (October 24): Apple leafhoppers are moderately abundant.

Rhode Island A. E. Stene (October 21): Apple leafhoppers are moderately abundant.

New York P. J. Parrott (September 30): Apple leafhoppers, Typhlocyba pomaria McAtee, are very abundant in the western part of the State. (October 23): Apple leafhoppers are moderately abundant in the Hudson Valley and scarce in the western part of the State.

Pennsylvania H. N. Worthley (October 2): Apple leafhoppers are moderately abundant at Biglerville, Adams County; numerous enough to annoy pickers.

Delaware L. S. Stearns (October 23): Apple leafhoppers are abundant throughout the State.

Virginia W. J. Schoene (October 26): At the time of the last report (September 23) leafhoppers were very numerous in a few orchards, annoying pickers by getting into their eyes and ears and also specking the fruit and damaging the foliage. The worst injury

reported was in the orchards in the Roanoke section, although leafhoppers were abundant in orchards near Harrisonburg. The presence of the leafhopper specks on apples caused some of the growers who were not prepared to wash their fruit great inconvenience and some loss. A few leafhoppers are still present though their numbers have been somewhat lessened.

- Ohio T. H. Parks (October 24): Apple leafhoppers were bad in the trees during picking.
- Illinois J. H. Bigger (October 13): Apple leafhoppers are reported as very abundant; annoying while picking apples.
- Kentucky W. A. Price (October 24): Apple leafhoppers have been very abundant in the orchards of the western and central part of the State. At Lexington they have specked the fruit and damaged the foliage.
- Wisconsin E. L. Chambers (October 27): Apple leafhoppers are moderately abundant.
- Minnesota A. A. Granovsky (October 22): Apples leafhoppers are moderately abundant. Some are present on foliage, discoloring it. They are mostly Empoasca fabae Harris.
- Missouri L. Haseman (October 22): Leafhoppers of several species came to lights about October 15 for two or three nights in unusual numbers. The rose leafhoppers have been especially abundant on apple foliage.
- Nebraska M. E. Swenk (October 26): On the night of October 4 there were enormous flights of the leafhopper Xerophloea viridis Fab. in southeastern Nebraska, from Omaha and Lincoln west to Kearney. The insects were so numerous as to cause much comment in the newspapers of the following day.

APPLE REDBUG (Lygidea mendax Reut.)

- Massachusetts A. I. Bourne (October 26): The redbug in our annual checkup of fruit proved to be quite generally abundant throughout the State and to have caused its usual amount of damage. It does not appear to have been unduly abundant in any particular section.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Pennsylvania T. L. Guyton (October 1): The San Jose scale is moderately abundant in certain orchards at Harrisburg, Franklin County.

H.N. Worthley (October 26): The San Jose scale is moderately abundant at State College. This insect is seen on apple fruits and is more numerous than in 1930.

Delaware

L. A. Stearns (October 23): The San Jose scale is generally on the increase.

Georgia

O. I. Snapp (October 20): Infestation has rapidly increased during the warm September and early October at Fort Valley until now it is heavier than during an average year.

Florida

J. R. Watson (October 25): The San Jose scale is perhaps more abundant than usual for October, as dry weather has checked the entomogenous fungi.

Ohio

T. H. Parks (October 24): The San Jose scale was decidedly more abundant this year than it has been for several years.

Indiana

J. J. Davis (October 24): The San Jose scale is unusually abundant, especially in the southern half of the State. The mild winter of 1930-31 was favorable for successful hibernation and the favorable and long season has enabled them to increase to very threatening numbers.

Illinois

J. H. Bigger (October 13): The San Jose scale is very abundant, greatly increased in 1931.

Wisconsin

E. L. Chambers (October 26): Several new isolated infestations not widely distributed in southern Wisconsin were discovered in Waterloo, Ft. Atkinson, Glen Flora, and Waukesha, all apparently spread on uninspected nursery stock from infested towns.

Missouri

L. Haseman (October 22): The San Jose scale has built up seriously in the southeastern part of the State in some orchards.

Mississippi

C. Lyle and assistants (October): This insect is unusually abundant over practically the entire State, being particularly noticeable on sand pears, which were reported as being in bloom on October 20 in the southern part of the State. (Abstract, J.A.H.)

APPLE MAGGOT (Rhagoletis pomonella Walsh.)

Maine

C. R. Phipps (October 26): The apple maggot is unusually abundant and destructive.

Massachusetts

A. I. Bourne (October 26): The apple maggot caused more injury than was the case last year, throughout the State. The flies showed a tendency to emerge later than usual and persisted through late August and into early September.

GIANT HORNET (Vespa crabro L.)

New York P. M. Eastman (October 22): A resident of New Paltz writes as follows, "Enclosed find letter from assistant county agent in regard to a new hornet that ate lots of my apples on the tree this season and may ruin my whole crop next year. There are other lots in the neighborhood."

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck.)

- Pennsylvania T. L. Guyton (October 22): The oriental fruit moth is moderately abundant on late peaches.
- Delaware L. A. Stearns (October 23): Considerable late-season injury by oriental fruit moth is reported on apples.
- West Virginia L. M. Peairs (October 24): The oriental fruit moth is moderately abundant at Morgantown. It increased notably in the late summer.
- Georgia O. I. Snapp (October 1): There was no new injury to peach twigs at Fort Valley during September on account of their hardened condition. Broods were overlapping.
- Ohio T. H. Parks (October 24): The oriental fruit moths are bad in quinces.
- J. S. Houser (October 5): The oriental fruit moth is very abundant. There were heavy losses in northern Ohio.
- Kentucky W. A. Price (October 24): The oriental fruit worm was quite active on the twigs during October. At Lexington and Bandana and in some orchards about Henderson and Paducah the twig injury was severe. At Lexington the wilted twig stage was present as late as October 17.
- Mississippi C. Lyle and assistants (October): The oriental fruit moth was reported by Mr. F. A. Smith as very abundant in the six northwesternmost counties in the State. (Abstract, J.A.H.).

PEACH TWIG BORER (Anarsia lineatella Zell.)

- California E. O. Essig (September 28): The peach twig borer was unusually abundant on late peaches in Yuba and Sutter Counties in August and September.

PEACH BORER (Aegeria exitiosa Say)

- Georgia O. I. Snapp (October 1): Pupation in the field at Fort Valley was light during September as compared with August. The peak of moth emergence occurred on September 11. One female deposited 826 eggs within a 24-hour period. Another female deposited a total of 1,257 eggs. (October 20): The last pupae of the season in the field were collected on October 16.
- Indiana J. J. Davis (October 24): Inquiries for controls were received during the past month from Crawfordsville, Indiana Springs, Lakeville, Linden, Milan, Poseyville, Richmond, and Salem.
- Nebraska M. H. Swenk (October 26): The peach tree borer was reported as killing peach trees during the third week in October in Douglas County.
- Mississippi C. Lyle and assistants (October): The peach borer is very abundant over the greater part of the State. This, however, is not an unusual condition in Mississippi. (Abstract, J.A.H.)

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

- Massachusetts A. I. Bourne (October 26): The plum curculio caused very serious injury to fruit, particularly apples. Growers on the whole did not have as good success in controlling it this year as they did last.
- Pennsylvania H. N. Worthley (October 2): The plum curculio is scarce at State College. There were few late feeding punctures, even on unsprayed trees.
- Delaware L. A. Stearns (October 23): The plum curculio is reported as a partial second brood developed in southern Delaware.
- Georgia O. I. Snapp (October 1): Second-generation adults began to emerge from the soil on September 26. Twenty-five to 27 days were spent in the soil during September by individuals of the second generation in the larval, pupal, and adult stages combined. Larvae reached maturity in the fruit in 17 days during September.
- C. H. Alden (October 23): The plum curculio is in hibernation at Cornelia.
- Kentucky W. A. Price (October 24): The plum curculio did serious damage late in the season in some isolated orchards. One fruit grower in Rowan County said that this insect damaged his apple crop 50 per cent this year.

Michigan R. Hutson (October 23): The plum curculio is moderately abundant, and very abundant in restricted localities.

Missouri L. Haseman (October 22): The plum curculio fed and bred later than usual, but no developments this month.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Mississippi N. D. Peets (October 17): The shot-hole borer is very abundant on badly kept peach and plum trees in Lincoln, Copiah, and Simpson Counties.

TARNISHED PLANT BUG (Lygus pratensis L.)

Massachusetts A. I. Bourne (October 26): The tarnished plant bug throughout the late summer and early fall proved very abundant, and its attack was unusually persistent. It caused rather conspicuous damage on a number of crops on which it does not usually concentrate. For instance, gladioli suffered considerably from the attacks of this species. There was considerable blighting and other injury on the blossom spikes as a result of plant-bug attack. We had reports of its injury on peaches and on various ornamental shrubs. Early in the season there was considerable twig injury on peaches.

A LEAFHOPPER (Erythroneura plena Beamer)

Georgia O. I. Snapp (October 16): Swarms of these hoppers are now attacking peach foliage at Fort Valley; however, they are not so abundant as they were during the fall of 1930.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California E. O. Essig (September 28): Pear leaf blister mites are moving to hibernating quarters around the bases of buds and now in leaf axils, in pear-growing districts throughout the State.

CHERRY

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Ohio T. H. Parks (October 22): These caterpillars were sent to us with the statement that they were defoliating cherry trees in Fairfield County.

PLUM

PLUM GOUGER (Anthonomus scutellaris Lec.)

Nebraska M. H. Swenk (October 26): A Jefferson County correspondent

reported that half of his crop of plums had been destroyed during the summer by the plum gouger.

RASPBERRY

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

Minnesota

A. G. Ruggles (September 26): Snowy tree crickets are very abundant wherever raspberries are grown. Damage is severe in some places.

BLACKBERRY

A MITE (Eriophyes essigi Hassan)

Oregon

D. C. Mote (September): W. D. Edwards reports the mites apparently still increasing in the berries. This condition will probably continue as long as the weather remains fairly warm.

GRAPE

GRAPE LEAFHOPPERS (Erythroneura comes Say)

Maryland

E. N. Cory (October 22): Apple leafhoppers (Erythroneura sp.) are very abundant.

West Virginia

L. M. Peairs (October 24): Grape leafhoppers are unusually numerous.

Minnesota

A. G. Ruggles (September 26): Leafhoppers (species not determined) are extremely abundant over the southern half of the State, particularly on grapes.

J. D. Winters (September 28): The grape leafhopper is occurring in unusually heavy abundance in Hennepin County and vicinity.

PACIFIC RED SPIDER (Tetranychus pacificus McG.)

California

E. O. Essig (October 20): Tetranychus pacificus is going into hibernation in grape vineyards in October.

PERSIMMON

A SCALE (Chionaspis longiloba Cooley)

Alabama

J. M. Robinson (October 21): The long-lobed Chionaspis is abundant on Japanese persimmon at Foley.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

Georgia O. I. Snapp (September 28): The fall generation of larvae are now at work on pecan foliage, at Fort Valley.

J. B. Gill (October 25): There has been no extensive damage in the pecan orchards of southern Georgia by the second brood of the fall webworm.

PECAN LEAF CASE BEARER (Acrobasis palliolella Rag.)

Georgia J. B. Gill (October 25): All larvae of the pecan leaf case-bearer (A. palliolella) have constructed their hibernacula on pecan trees at this time. Based on the relative number of larvae going into hibernation, there will only be a moderate infestation to cause damage to the buds in the spring, even if larvae successfully pass the winter and are not heavily parasitized by the chalcid Secodella acrobasis Craw.

TWIG GIRDLER (Oncideres circulatus Say)

North Carolina R. W. Leiby (October 22): Although the twig girdler is doing considerable injury this fall, it is apparently not present in the more destructive numbers of the fall of 1930.

South Carolina A. Lutken (October 21): Pecan twig girdlers are causing considerable damage to pecan groves throughout the State.

Georgia J. B. Gill (October 25): The pecan twig-girdler is causing damage in southern Georgia, especially to pecan trees growing adjacent to woodlands. The extent of damage is not so severe as in some years.

Alabama J. M. Robinson (October 21): The hickory twig-girdler is abundant on pecan in Montgomery.

Mississippi State Plant Board (October 26): The hickory twig-girdler has been reported as injurious in various sections of southern Mississippi.

BLACK PECAN APHID (Myzocallis fumipennellus Fitch)

Florida J. R. Watson (October 21): The black aphid was very abundant on pecans during the summer, extending up into October.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Georgia J. B. Gill (October 25): The citrus whitefly is moderately abundant on Satsuma oranges and ornamentals in southwestern Georgia.

- Florida J. R. Watson (October 25): The citrus whitefly is moderately abundant; more than for several years. The entomogenous fungi were checked by dry weather.
- Alabama J. M. Robinson (October 21): The citrus whitefly is moderately abundant on crepe myrtle at Tuscaloosa and on Satsuma orange at Oxford.
- Mississippi C. Lyle and assistants (October): Mr. H. Gladney reports the citrus whitefly as very abundant on citrus at Ocean Springs. (Abstract, J. A. H.)

A MEALYBUG (Phenacoccus gossypii Towns. & Ckll.)

- California Monthly News Letter, Los Angeles County Agr. Comm. (September 15): The Mexican mealybug P. gossypii is rapidly becoming a serious pest of ornamentals and certain garden crops in Los Angeles County.
- This mealybug has attracted particular attention as a pest of ornamentals and is a very omnivorous feeder. Cosmos, chrysanthemum, aster, dahlia, Australian pea, hollyhock, ivy-geranium, and many others have been killed by its attack. Among wild plants, sunflower and cocklebur carry very heavy infestations. It has been known to severely injure small plantings of eggplant, pepper, and okra, while tomatoes, beans, and a number of related plants are also hosts. Proximity to plantings of ornamentals seems to be the source of field-crop infestations which would probably limit its seriousness as a pest of commercial acreage.

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

- Florida J. R. Watson (October 25): The Florida red scale is very abundant and is increasing.

BLACK SCALE (Saissetia oleae Bern.)

- California E. O. Essig (September 28): The black scale is moderately abundant.

PURPLE SCALE (Lepidosaphes beckii Newm.)

- Georgia J. B. Gill (October 25): The purple scale is scarce on Satsuma orange trees in southwestern Georgia.
- Florida J. R. Watson (October 25): The purple scale is moderately abundant and is more abundant than usual for several years. Entomogenous fungi were checked by the dry weather.

LEAF-FOOTED BUGS (Leptoglossus spp.)

- Florida J. R. Watson (October 21): L. gonagra Fab. was abundant on

some citrons growing in a citrus grove in Polk County. Besides the citrons, they were attacking mid-season varieties of oranges, but not the late varieties. This is the first instance of this insect being of economic importance that has been brought to our notice in Florida. L. phyllopus L. is always abundant and injurious, and is now doing some damage to satsuma oranges in Alachua County. The citrons involved in the outbreak were the cucurbits, not the citrus citron.

FIRE ANTS (Solenopsis spp.)

California

Monthly News Letter, Los Angeles County Agr. Comm. (September 15): Young citrus trees, mainly oranges, have been damaged to a considerable extent this season by various species of fire ants (Solenopsis). Damage has not been entirely confined to citrus, as the ants have been found working at the base of aster plants in connection with the aster root aphid; also on peach trees.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Mississippi

H. Dietrich (October 20): Fuller's rose beetle was defoliating satsuma orange and destroying chrysanthemum and zinnia plants at Lucedale on September 30. It was found in considerable numbers on Cedrus deodara in a nursery at Lucedale, chewing off the new tender needles on October 19.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida

J. R. Watson (October 25): The citrus rust mite is moderately abundant and unusually troublesome during the late summer due to dry weather.

GUAVA

CARDIN'S WHITEFLY (Aleurodicus cardini Back)

Florida

G. B. Merrill (October 6): Cardin's whitefly was reported from Sanford, on a city lot on guava October 5; severe infestation. (Collected by G. H. Baker.)

RED-BANDED THRIPS (Selenothrips rubrocinctus Giard)

Florida

J. R. Watson (October 21): S. rubrocinctus was found causing russetting of guavas at Lake Alfred.

TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi

H. Dietrich (October 20): The vegetable weevil was injuring turnips by eating off leaves at Lucedale on October 20. This is the first notice of this pest this year.

FLEA BEETLES (Halticinae)

Mississippi

H. Dietrich (October 20): Flea beetles Phyllotreta bipustulata Fab., P. vittata Fab., and P. aeneicollis Cr., were very abundant on turnip and cabbage in southern George County on October 8.

C. Lyle (October 22): A correspondent at Courtland sent to this office on October 14 specimens of P. vittata with the report that they were abundant on turnips.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Alabama

K. L. Cockerham (October 1): Adults were quite plentiful on the foliage of fall Irish potatoes at Foley, Baldwin County.

BLISTER BEETLES (Epicauta spp.)

South Carolina

J. B. Hull (October 19): The margined blister beetle (E. marginata Fab.) is causing considerable damage to ornamental gardens at Charleston by feeding on the foliage of ivy.

Illinois

J. H. Bigger (October 13): Blister beetles, mostly E. vittata Fab., are more abundant than ordinarily during the season of 1931. They were caught in the car while I was traveling along roads on several occasions.

Mississippi

C. Lyle and assistants (October): Striped blister beetles are very abundant over the northwestern counties.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Alabama

J. M. Robinson (October 21): The green stink bug is moderately abundant on beans at Mobile.

Mississippi

C. Lyle and assistants (October): The green stink bugs are moderately abundant on peas at Ocean Springs. (October 20): The southern green stink bug adults and various stage nymphs have been unusually abundant throughout the month on cowpeas and butter lima beans in George County, in many cases destroying most of the crop. The brown cotton bug (Euschistus servus Say) is present with the above but in lesser numbers.

GREEN STINK BUG (Acrosternum hilaris Say)

Virginia C. R. Willey (October 23): Specimens of the green soldier bug were received October 1, from Kinsale, Westmoreland County, where they were damaging butter beans.

FALSE CHINCH BUG (Nysius ericae Schill.)

Mississippi C. Lyle (October 22): Severe injury to turnips by the false chinch bug was reported from Crystal Springs, on September 29.

POTATO

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

West Virginia F. W. Craig (October 5): The potato flea beetle seemed about normal on the leaves, but considerable damage was done to the tubers by the larvae. This damage was the first of its kind to be noticeable in our potato section along the Ohio River.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia H. G. Walker (October 27): The potato leafhopper is moderately abundant on the Eastern Shore of Virginia.

Florida J. R. Watson (October 21): The bean jassid, E. fabae, is also becoming rather abundant on beans, but perhaps not more so than during the average season.

Ohio T. H. Parks (October 24): The potato leafhopper is very abundant.

HORNWORMS (Protoparce spp.)

Maine C. R. Phipps (October 26): The tomato worm (P. quinquemaculata) is unusually abundant and widespread.

West Virginia F. W. Craig (October 5): Tomato hornworms were very bad in Mason County.

Indiana J. J. Davis (October 24): A number of tomato worm pupae from several sections of the State have been submitted for identification. This would seem to indicate that tomato worms were more abundant than usual this season.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Connecticut N. Turner (October 19): The beetle is now very abundant in all sections of the State except the extreme northeastern part. The second-generation emergence was completed by October 1. Eggs were found in the field September 18. In the insectary third-generation eggs were deposited in small numbers as early as September 5. There was no indication of development of a third generation in the fields. Large numbers of adults went into hibernation during the first half of October.
- Rhode Island A. E. Stone (October 21): The Mexican bean beetle is moderately abundant.
- Pennsylvania T. L. Guyton (October 1): The Mexican bean beetle is moderately abundant at Harrisburg.
- H. N. Worthley (October 26): The Mexican bean beetle is moderately abundant at State College. This insect has increased in later generations and the adults are now going into hibernation.
- Delaware L. A. Stearns (October 23): Population is reported greatly increased during the latter part of the summer.
- Maryland E. N. Cory (October 22): The Mexican bean beetle is very abundant.
- West Virginia F. W. Craig (October 5): This insect did not amount to much throughout the season, but the second generation developed into a numerous brood and there are large numbers of the adults to enter hibernation.
- L. M. Peairs (October 24): The Mexican bean beetle is moderately abundant at Morgantown. Large numbers are still active, and feeding extensively on soybeans.
- Virginia W. J. Schoene (October 26): The Mexican bean beetle is moderately abundant in Blacksburg.
- H. G. Walker (October 27): The Mexican bean beetle is very abundant in Norfolk and on the Eastern Shore of Virginia.
- Georgia O. I. Snapp (October 1): Bean fields at Fort Valley which had been damaged, were practically free of larvae on this date.
- C. H. Alden (October 23): The Mexican bean beetle is moderately abundant at Cornelia.

Ohio T. H. Parks (October 24): The Mexican bean beetle is very abundant and is now worse than it has been for years.

Indiana J. J. Davis (October 24): The Mexican bean beetle is very abundant.

Kentucky W. A. Price (October 24): The Mexican bean beetles were present in large numbers at Lexington, Murray, and Aragua on September 30.

Mississippi C. Lyle and assistants (October): This insect was reported as moderately abundant and doing considerable damage in the northeastern corner of the State, from Alcorn County to Monroe County. (Abstract, J.A.H.)

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi C. Lyle and assistants (October): Reports of serious injury have been received from points in all parts of the State.

BEAN LEAF ROLLER (Goniurus proteus L.)

Florida J. R. Watson (October 21): The bean leaf roller is beginning to be very abundant on beans.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Florida J. R. Watson (October 25): E. lignosellus was very injurious to early-planted beans throughout most of Florida during the last part of September and the first part of October.

Mississippi C. Lyle (October 22): Medium injury to beans at Lyman was reported on October 15.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

West Virginia F. W. Craig (October 5): Cabbage worms were very bad in Mason County.

Virginia H. G. Walker (October 27): A fungus has aided greatly in the control of the imported cabbage worm and of the cabbage looper, Autographa brassicae Riley, in the Norfolk section.

Ohio T. H. Parks (October 24): The imported cabbage worm is very abundant.

South Dakota H. L. Severin (October 20): The imported cabbage worm is more abundant than usual.

Iowa H. E. Jaques (October 25): The imported cabbage worm is moderately abundant in many counties.

Missouri L. Haseman (October 22): The imported cabbage worm was reported at Columbia. Butterflies are on wing in small numbers. Worms continue to feed.

CROSS-STRIPED CABBAGE WORM (Evergestis rimosalis Guen.)

Mississippi C. Lyle (October 22): On October 17 a correspondent at McComb reported severe injury to collard plants by caterpillars identified as Pieris protodice Bdv. & Lec. and E. rimosalis.

CABBAGE WEBWORM (Hellula undalis Fab.)

Virginia H. G. Walker (October 27): Larvae were found in several fields of kale, collards, and broccoli near Norfolk.

South Carolina A. Lutken (October 21): Cabbage webworms have been unusually abundant on turnips, rutabagas, and collards.

Alabama J. M. Robinson (October 21): The turnip webworm is very abundant on collards at Societyhill.

California H. Ryan (October 17): Considerable damage by this insect is occurring to cauliflower.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia H. G. Walker (October 27): The cabbage aphid is rapidly increasing on broccoli and collards.

Mississippi H. Gladney (October 20): The cabbage aphid is moderately abundant on collards at Ocean Springs.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia C. R. Willey (October 23): We are still getting specimens of the harlequin cabbage bug occurring on "salads."

Georgia J. B. Gill (October 25): The harlequin bug is moderately abundant on collards at Albany.

Alabama J. M. Robinson (October 21): The harlequin bug is moderately abundant at Auburn.

Mississippi C. Lyle and assistants (October): The harlequin bug was reported during the latter half of the month as doing considerable damage to turnips, cabbage, collards, and dahlias over the greater part of the State. (Abstract, J.A.H.)

ASPARAGUS

BET ARMYWORM (Laphygma exigua Hbn.)

California S. Lockwood (October 5): The sugar beet armyworm has been responsible for some little damage to asparagus. However, as this plant is a monocotyledon and the chewing is confined entirely to the bark, it is questionable whether any actual monetary loss has been suffered.

MELONS

MELON APHID (Aphis gossypii Glov.)

Nebraska M. H. Swenk (October 26): Reports of injury continued to be received until October 4, when they ceased abruptly.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

West Virginia L. M. Peairs (October 24): The striped cucumber beetle is very abundant on soybeans at Morgantown.

F. W. Craig (October 5): The cucumber beetle did not seem to be so numerous as usual during the early part of the season, but damage to the melon fruits was attributed to the larvae. Where the melon came in contact with the soil the rind was punctured with numerous small holes. These did not go through the rind into the flesh and would have been insignificant if it was not for the fact that they allowed the entrance of rot organisms.

Florida J. R. Watson (October 25): The striped cucumber beetle is very abundant in everglades only.

Ohio J. S. Houser (October 5): The striped cucumber beetle is very abundant.

Minnesota A. A. Granovsky (September 27): The striped cucumber beetle is moderately abundant. It is common in all cantaloupe and cucumber fields about St. Paul and Minneapolis.

Iowa H. E. Jaques (October 25): The striped cucumber beetle is moderately to very abundant in Pocahontas, Powshiek, and Emet Counties.

Missouri L. Haseman (October 22): The striped cucumber beetle is reported at Columbia. It is less abundant than a year ago but there are plenty of them. They are still feeding.

PICKLE WORM (Diaphania nitidalis Stoll)

Connecticut

W. E. Britton (October 24): This is the first injury by this insect that I have ever seen or had reported in Connecticut. Until now we did not have an adult in our collection. It is attacking cucumber and summer squash at Branford, Hamden, and Greenwich.

Maryland

E. N. Cory (October 22): Diaphania nitidalis was reported on squash in Baltimore County.

South Carolina

W. J. Reid, Jr. (October 23): The heavy infestation of fall squash plantings at Charleston by the pickle worm and the melon worm (D. hyalinata L.), reported in September, has continued throughout October. Injury to the fruit has been quite general. No squash whatever has been harvested in this section from unpoisoned plantings. In most instances plants in unpoisoned fields are now entirely dead as a result of the insect attack. A second fall generation of both species appeared in the middle of October. Adults of both species were abundant in the field throughout October.

Florida

J. R. Watson (October 23): The pickle worm is unusually destructive to fall-grown cucumbers in the north-central part of the State. Some fields have been utterly destroyed in a week's time. The caterpillars mine the entire stem of the plant. Squashes have not been so severely injured.

F. S. Chamberlin (October 12): The pickle worm is very destructive to cucurbits in Blountstown at this time.

W. J. Reid, Jr. (October 21): Fall cucumber plantings in the vicinity of Wauchula, Hardee County, are being severely damaged by the pickle worm and the melon worm, D. hyalinata L. The worms are feeding on buds, leaves, vine stems, and fruit of all sizes. All plantings are apparently infested to some extent, as much as 75 per cent of the fruit being rendered unfit for use. Complete abandonment of several fields by the growers has occurred. Feeding of the worms on the vine stems is quite general. Growers of the county estimate that their 1931 fall cucumber crop of approximately 600 acres will be cut 50 per cent. The pests are much more destructive than usual this fall.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

Ohio

J. S. Houser (October 5); We have had the most destructive outbreak on record in Ohio this summer from the squash bug.

West Virginia L. M. Peairs (October 24): The squash bug is very abundant at Morgantown.

SPOTTED BEET WEBWORM (Hymenia perspectalis Hbn.)

Mississippi C. Lyle (October 22): Larvae tentatively identified by J. M. Langston were reported as heavily infesting sweetpotato plants at Fruitland Park, on October 2, and as abundant on pigweed in turnip fields at Lucedale, on October 17.

CELERY

GREENHOUSE LEAF TYER (Phlyctaea rubigalis Guen.)

Pennsylvania C. A. Thomas (October 20): I have recently found several lepidopterous larvae causing considerable injury by chewing channels in the surface of celery stalks in the field. At least three species are involved: P. rubigalis Guen., which is perhaps most common; a greenish, white-striped looper which I believe to be the celery looper, Autographa falcigera Kby., which is fairly common; and a small brownish striped caterpillar with large black tubercles, black head, and black thoracic shield. A considerable number of small moths, which I believe are the adults of this latter larva, were flying in the celery field when disturbed. Although injury by these three kinds of larvae was not serious it was conspicuous enough to worry the celery growers. The worst injury seems to be on the yellow celery.

Michigan R. Hutson (October 23): This insect was very abundant on celery during September.

SPINACH

CABBAGE LOOPER (Autographa brassicae Riley)

Ohio T. H. Parks (October 24): The greenhouse specialist reports cabbage loopers common on spinach at Toledo.

Pennsylvania C. A. Thomas (October 20): Some injury has been caused to spinach in Bucks County, by the cabbage looper eating holes through the leaves. Eggs of some undetermined tachinid fly were fairly common on the full-grown loopers.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Pennsylvania C. A. Thomas (October 20): A serious outbreak is now occurring in turnip fields in southern Bucks County. The outbreak has

been apparent only a week or so, and during that time leaves of half-grown turnip plants have entirely died and dried up, so the fields appear burned and brown. Internal insect parasites are not common, but a fungus appears to have effected some slight control. A few syrphid larvae and coccinellids are also present, but not yet common. These aphids are spreading into adjacent fields of black radish.

Virginia H. G. Walker (October 27): The turnip aphid is causing considerable damage to turnip greens and young cabbage seedlings in the Norfolk area.

Mississippi State Plant Board (October 26): Turnip lice have not been numerous thus far, probably owing to the warm weather, which has allowed parasites to continue holding them in check.

A PENTATOMID BUG (Peribalus limbolaris Stal)

North Carolina R. W. Leiby (October 17): A single report of very severe injury, similar to that of the harlequin bug, to a field of turnips at Smithfield has been received. A large number of specimens were sent with the complaint.

LETTUCE

CORN EAR WORM (Heliothis obsoleta Fab.)

California E. O. Essig (September 28): The corn ear worm injured head lettuce in the Salinas Valley in September, destroying a few entire fields. Larvae enter developing heads and tunnel to the heart.

SUGAR BEETS

BEEF LEAFHOPPER (Eutettix tenellus Baker)

Utah G. F. Knowlton (October 20): The beet leafhopper caused considerable damage to sugar beets in many parts of northern Utah. Russian thistle is now drying up on the desert breeding grounds, and the leafhoppers are scattering to near-by succulent vegetation in Tooele County and Boxelder County areas.

MUSHROOMS

A HUMPBACED FLY (Aphiochaeta spp.)

Pennsylvania
Maryland
Delaware C. A. Thomas (October 20): Larvae of phorid flies (Aphiochaeta spp.) have caused considerable injury to mycelium and to stems and caps of growing mushrooms in mushroom houses, during late September and October, in Maryland, Delaware, and Pennsylvania. In many instances the destructive abundance of these flies could be traced to the manure having been quite wet when placed in the houses.

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

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Vermont

H. L. Bailey (October 27): Crawlers appeared in considerable numbers on twigs and, later, on the large branches of trees in and about Montpelier during the summer. There had been a heavy infestation of adult scale insects from the year before. Ash and elm were most seriously infested.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

Maryland

C. H. Hanson (October 16): Insects were found on beech trees at Forest Glen.

BIRCH

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

BIRCH LEAF-MINING SAWFLY (Phyllotreta nemorata Fall.)

Maine

J. V. Schaffner, Jr. (September 24): Observations made in several localities between Skowhegan, Guilford, and Monson showed 25 to 50 per cent of the foliage mined with occasional trees showing possibly 75 per cent of the foliage affected. From Monson to Greenville and Bingham to Jackman from 20 to 25 per cent of the foliage was mined. Bucculatrix infestations are severe in these localities.

New Hampshire

J. V. Schaffner, Jr. (September 24): In the White Mountain section of New Hampshire the birch foliage, especially on the mountain sides, is badly browned by the B. canadensisella. The skeletonizer seems to be largely responsible for this condition though some of it is due to the great abundance of aphids. T. H. Jones noted a heavy infestation of about 2 acres in a growth of small gray birch at Exeter. This was the only instance of injury noted in this section.

New York

R. D. Glasgow (October 26): The birch in northeastern New York and including the greater part of the Adirondack area has been severely injured this year and in many places completely defoliated by the middle of September, through the work of one or both of two insect pests, namely, B. canadensisella, and the white birch leaf-mining sawfly (P. nemorata Fall.).

Wisconsin

W. Middleton (September): B. canadensisella has been reported as abundant from Wisconsin.

Minnesota

W. Middleton (September): We have received reports of the abundance of B. canadensisella in Minnesota.

New Hampshire J. V. Schaffner, Jr. (September 24): Observations made during September indicate that the infestations of P. nemorata in sections of New Hampshire and Vermont are quite similar to those of 1930. In the vicinity of Gorham, N. H., an average of about 25 per cent of the paper birch leaves are infested, this being the heaviest observed.

BRONZE BIRCH BORER (Agrilus anxius Gory)

Ohio E. W. Mendenhall (October 21): Bronze birch borers are very bad in birch trees in and about Dayton. It looks like the destruction of the birch trees here.

Indiana J. J. Davis (October 24): What was described as typical injury was received from Plymouth, October 13.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Delaware L. A. Stearns (October 23): Numerous reports of boxelder bug have been received from southern Delaware.

Maryland E. N. Cory (October 6): Outbreaks have occurred in Somerset, Kent, Anne Arundel, Wicomico, and Montgomery Counties. Previously reported in larger numbers from Worcester County.

Virginia C. R. Willey (October 23): Specimens were received from Clarke County October 1. The letter states: "There are thousands and thousands of them hanging on trees and fences of a place in this town. Crawling in large numbers up the sides of house-- young ones seem to cluster together on trunks and large limbs of the trees."

South Carolina F. Sherman (October 21): The boxelder bug is now present in great numbers on boxelder.

Indiana J. J. Davis (October 24): The boxelder bug was more common than usual and reported from Plymouth, Winamac, Austin, and Logansport. The first report was received October 6, and the last October 23, at which time most of the specimens received were mature. In some cases they were reported abundant on boxelder but in most cases they were reported because of their annoyance in the house.

Illinois W. P. Flint (October 24): Boxelder bugs have been much more annoying than usual this fall, judging by the large number of letters received concerning these insects. For several weeks letters concerning these insects have been received in every mail.

- Wisconsin E. L. Chambers (October 26): Boxelder bugs continued to be very numerous everywhere seeking shelter all during the month of October and many reports came in from all sections of the State for identification and control measures.
- Minnesota A. G. Ruggles (October 27): Boxelder bugs are more numerous than they have been for many years.
- Iowa H. E. Jaques (October 25): The boxelder bug is moderately abundant in Carroll County.
- Nebraska M. H. Swenk (October 26): The boxelder bug was about normally troublesome as a house invader during October.
- Utah G. F. Knowlton (October 13): Boxelder bugs are rather annoying to households now as they seek hibernation quarters. They are apparently less abundant than a year ago at this time.
- Washington M. A. Yothers (October): The boxelder bug is causing a rather common injury to the growing fruits of apples and pears in certain parts of the Wenatchee district. The injury is caused by the insect's feeding puncture and is not greatly unlike that caused by the tarnished plant bug.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Bdv.)

- South Carolina A. Lutken (October 21): Caterpillars were very abundant during September and were heavily parasitized.
- Ohio E. W. Mendenhall (September 29): The catalpa trees, especially the Bungeii variety are badly infested in several sections in southern Ohio.
- Illinois J. H. Bigger (September 15): Caterpillars were damaging shade and ornamental plantings during the last of August.

CATALPA MEALYBUG (Pseudococcus comstocki Kuwana)

- Connecticut N. Turner (October 14): Egg masses were received from Norwalk, where they were collected on umbrella catalpa.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

- Mississippi C. Lyle and assistants (October): Thirty-six larvae were taken from one Cedrus deodora plant. The plant was about 5 feet high.

SOUTHERN PINE WEEVIL (Pissodes nemorensis Germ.)

Mississippi

H. Dietrich (October 20): P. nemorensis was present in numbers injuring Cedrus deodora in a nursery at Lucedale on October 19.

BLUE PINE BORER (Callidium antennatum Newm.)

Connecticut
and
New York

E. P. Felt (October 23): Red cedar, used for fences or ornamental structures, has been invaded and extensively damaged by the blue pine borer, C. antennatum, or a closely related species, at both Greenwich, Conn., and on eastern Long Island, N. Y.

ELM

ELM LEAF BORER (Galerucella xanthomelaena Schrank)

California

E. O. Essig (September 28): The elm leaf beetle is spreading to many parts of the State.

ELM BORER (Saperda tridentata Oliv.)

Nebraska

M. H. Swenk (October 26): Several letters received during October complained of damage done to elms during the summer.

HEMLOCK

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Maine

H. B. Peirson (October 24): Specimens of the pine leaf scale have been found on hemlock from several parts of the State.

HICKORY

HICKORY BARK BEETLE (Scolytus quadrispinosus Say)

Ohio

E. W. Mendenhall (October 2): The hickory trees in Fountain Park, Woodstock, are badly infested with the hickory bark beetles. There are 1,000 to 1,500 hickory trees in this grove.

PIGEON TREMEX (Tremex columba L.)

Indiana

J. J. Davis (October 24): The pigeon tremex was reported common at Anderson, October 5, on hickory trees which were apparently in a dying condition.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

New York

R. D. Glasgow (October 26): From Albany north, and as far west as the limits of the Adirondack State Park, nearly all of the larch was defoliated in late September by the late brood. The larch throughout the same area was very generally defoliated by the insect in June. While defoliation in late September alone might be of little consequence, it is likely this season that it will accentuate the damage resulting from the earlier defoliation.

LOCUST

LOCUST BORER (Cyllene robiniae Forst.)

New York

E. P. Felt (October 23): The locust borer was reported as injurious at White Plains. The insect is generally distributed in southeastern New York and very frequently causes serious injury to individual trees or groups of trees, and under exceptional conditions may kill good-sized plantings of young trees.

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Mississippi

W. L. Gray (October): The locust leaf miner is moderately abundant on wild black locust in Adams County.

MAPLE

GREEN-STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Mississippi

H. Dietrich (October 20): A. rubicunda is defoliating red maple (Acer rubrum) in the Escatawpa River Swamp, George County.

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

Indiana

J. J. Davis (October 24): C. femorata was reported damaging maples at Plymouth and Lafayette the past month.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Mississippi

C. Lyle (October 22): Aphids were received on September 26 from Clinton, where they were reported as abundant on silver leaf maple trees.

WOOLLY MAPLE LEAF SCALE (Phenacoccus acericola King)

Rhode Island J. V. Schaffner Jr. (September 10): Specimens were brought in and there were reports that Norway and sugar maple shade trees in Providence, Pawtucket, Cranston, Warwick, and Woonsocket seem to be quite generally infested.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Ohio E. W. Mendenhall (September 26): The soft maples in Greenville are very badly infested in private and public plantings. The trees have the appearance of cotton on the limbs and branches.

OAK

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Mississippi C. Lyle (October 22): Larvae were observed during the past month on oak trees at A. & M. College.

A DATANA CATERPILLAR (Datana contracta Walk.)

Mississippi H. Dietrich (October 20): D. contracta is extremely abundant on various oaks and the river birch (Betula nigra) in the swamps of the Escatawpa River, George County.

ORANGE-STRIPED OAK WORM (Anisota senatoria S. & A.)

North Carolina R. A. St. George (October 3): Larvae were especially abundant causing considerable injury to the foliage of red, scarlet, and southern redbark trees in the Bent Creek section of the Pisgah National Forest. The injury was also noted in other places visited in western North Carolina, indicating that the infestation was quite widespread.

AN OAK WORM (Anisota consularis Dyar)

Mississippi H. Dietrich (October 20): A. consularis was found defoliating oaks in the Escatawpa River swamps, George County.

IMPERIAL MOTH (Basilona imperialis Drury)

Mississippi H. Dietrich (October 20): B. imperialis was taken on oak in the Escatawpa River Swamp, George County.

RED OAK BORER (Romuleum rufulum Hald.)

A LONGHORN BEETLE (Urographis fasciatus DeG.)

Maryland E. N. Cory (October 22): R. rufulum and Graphisurus fasciatus DeG. occur on dying red oak at Annapolis. (Det. by R.A. St. George.)

GIANT APHID (Longistigma caryae Harr.)

Massachusetts E. P. Felt (October 23): The large hickory aphid was reported from Pittsfield. It occasionally becomes extremely abundant on the branches of hickory, beech, and oriental plane.

OBSURE SCALE (Chrysomphalus obscurus Comst.)

Mississippi C. Lyle and assistants (October): The obscure scale is present on oak trees in Corinth in large numbers and has done serious damage to some of the trees, causing the limbs to die and weakening the whole tree.

PINE

PINE TUBE MOTH (Eulia pinatubana Kearf.)

Maine H. B. Peirson (October 24): The pine tube builder was very prevalent throughout the vicinity of Augusta. About 90 per cent of the larvae have left the tubes.

New Jersey E. P. Felt (October 23): The pine tube builder was reported as injurious to pine at Tenafly. It is a common species locally and occasionally abundant upon individual trees or groups of trees.

PINE WEBWORM (Tetralopha melanogrammos Zell.)

Vermont H. L. Bailey (October 27): The pine webworm was found in considerable numbers on Scotch pine plantations at Essex.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina R. A. St. George (October 3): No southern pine beetle outbreaks were noted or reported during the summer in the Southeastern States except in the Bent Creek and Billy Moores Creek areas of the Pisgah National Forest located near Asheville.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine H. B. Peirson (October 24): A moderate infestation in Scotch pine of the white pine weevil has been observed at Oquossuc.

A BARK BEETLE (Ips calligraphus Germ.)

Mississippi C. Lyle (October 22): Bark beetles were reported abundant in a young pine tree at Brookhaven on October 15.

A SAWFLY (Neodiprion pinetum Nort.)

Maine H. I. Peirson (October 24): Two lots of nearly mature larvae were found at Augusta.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Wisconsin E. L. Chambers (October 26): White pine in southwestern Wisconsin forest plantings have been showing unusually heavy infestation (in spots) and trees in ornamental plantings have shown heavy infestations, continuing to grow heavier and heavier late this fall.

Washington M. A. Yothers (Summer, 1931): The pine leaf scale is found commonly on pine trees in almost any part of the pine regions of the eastern slope of the Cascade Mountains lying west of Yakima and Wenatchee.

REDWOOD

A REDWOOD SCALE (Aonidia shastae Coleman)

California E. O. Essig (October 20): The redwood scale (A. shastae) was first taken on giant Sequoia trees at Atwell Mills, near Sequoia National Park, in April, 1931. It occurred in great numbers on the leaves and stems of certain young second-growth trees only in more or less shady areas along the highway, where road dust contributed to the discomfort of the infested trees. Additional material was furnished in August, 1931, from the same locality. Specimens were referred to Prof. G. F. Ferris who determined them as the above.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Indiana J. J. Davis (October 24): Caterpillars were reported abundant at Bedford, October 7.

Nebraska M. H. Swenk (September): Continued to defoliate walnut trees in the southeastern part of the State during the first half of September, and complaints of such injuries continued to be received until the end of the month.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Massachusetts J. V. Schaffner, Jr. (September 24): C. W. Collins observed on August 26 several roadside willows from 25 to 50 per cent defoliated in Norfolk, Walpole, and Wrentham (Norfolk County).

INSECTS AFFECTING GREENHOUSES
AND ORNAMENTAL PLANTS

WHITE GRUBS (Phyllophaga spp.)

Alabama

H. Dietrich (October 20): Some azalea bushes have had all their roots eaten away by white grubs. There was nothing left except a few white stubs of the larger roots. Loding tells me that this is the way it works: All azalea bushes are heavily mulched with oak leaves to make the proper acid soil for their growth and to conserve moisture. Now in the spring heavy droves of adult beetles come to town, settle in the trees, and then in the day time seek shelter in the leaf mulch under the azalea bushes. Then they lay their eggs and as a result a large crop of white grubs is found to feed on the azalea roots. Loding tells me complaints are getting commoner all the time.

BLUEBERRY STEM BORER (Oberea myops Hald.)

Massachusetts

A. I. Bourne (October 26): In early October there was discovered to be a rather well established infestation of O. myops on various plantings of azalea and rhododendron here on the college campus.

Connecticut

E. P. Felt (October 23): The azalea twig borer, O. myops, was found working in the stems of both azalea and rhododendron at Greenwich.

TWO-MARKED TREEHOPPER (Enchenopa binotata Say)

Massachusetts

E. P. Felt (October 23): Egg masses of the two-marked tree hopper on dogwood were received from Great Barrington. This insect is also very common on Calcestrus or Roxbury waxwork, and its work, in connection with oviposition, has come to hand on several occasions.

A LYGAEID (Oncopeltis fasciatus Dall.)

Virginia

C. R. Willey (October 23): Several persons have brought in specimens of this insect, which seems to be occurring in numbers on various vines and flowers in Richmond. This is the first time we have had complaints.

A BLACK SCALE (Saissetia nigra Nietn.)

California

E. O. Essig (October 20): In August G. F. Ferris called the writer's attention to a Pittosporum tree on the Stanford Campus which was rather severely infested. The tree was growing near a building and may have been in just the right sort of a

protected location for the propagation of the insect. Later in September it was collected on aralia and a conifer in a nursery in San Rafael, Marin County, where it was apparently doing nicely in the open. The past few winters have been rather mild in California and may be responsible for the present showing of the coccid.

CAMEL CRICKET (Ceuthophilus sp.)

Ohio E. W. Mendenhall (October 15): The cave or camel crickets were very bad and did considerably damage to seedlings in greenhouses in Columbus.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Alabama J. M. Robinson (October 21): Cyclamen mites are moderately abundant in a greenhouse at Opelika.

GREENHOUSE CENTIPEDE (Scutigera immaculata Newp.)

California E. O. Essig (September 28): Garden centipedes are abundant in certain greenhouses and small areas in many parts of the State.

CORN EAR WORM (Heliothis obsoleta Fab.)

Maryland E. N. Cory (October 22): This insect is injuring geraniums and cutting into the base of carnation buds.

Ohio T. H. Parks (October 24): These larvae ruined many flower buds of chrysanthemum in the greenhouse during September at Logan. They also ate flowers and buds of calendulas both in and outside of the greenhouse. Greenhouse men in Ashtabula, Cuyahoga, Lorain, and Lucas Counties have been losing heavily during September and October from corn ear worm injury to both the green and ripening fruits. This type of injury is very infrequent in greenhouses though of annual occurrence to early tomatoes during July in southern Ohio.

Illinois W. P. Flint (October 24): Greenhouses all over the State have been invaded by the adults and at the present time many greenhouse crops are suffering severely from the feeding of larvae.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Michigan E. I. McDaniel (October 24): Larvae of the fall army worm, the corn ear worm, and possibly some of their relatives are appearing in greenhouses in various parts of Michigan. The moths are evidently flying in from outside and producing larvae which mutilate the buds and blossoms and later other parts of chrysanthemum, rose, calendula, geranium, and sometimes other plants.

SPOTTED GARDEN SLUG (Limax maximus L.)

Ohio E. W. Mendenhall (October 14): The spotted giant garden slugs are very bad in gardens in Columbus and do considerable damage to shrubs and ornamental plants.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

Mississippi C. Lyle and assistants (October): The lesser canna leaf roller is very common on cannas at Lucedale and Natchez. (Abstract, J.A.H.)

CHRYSANTHEMUM

GREENHOUSE LEAF TIER (Phlyctaenia rubigalis Guen.)

Maryland E. N. Cory (October 22): The greenhouse leaf tier in Prince Georges County on chrysanthemums is worse than I have ever seen it before.

CHRYSANTHEMUM LEAF MINER (Napomyza chrysanthemi Kowarz)

Maryland E. N. Cory (October 22): Phytomyza chrysanthemi occurs in a greenhouse on chrysanthemums in Prince Georges County.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirk.)

Mississippi Wm. L. Gray (October 17): The crepe myrtle aphid is very abundant at Narchez, accompanied by sooty mildew.

DAHLIA

A NITIDULID (Conotelus obscurus Er.)

Mississippi C. Lyle (October 22): Specimens have been received recently from Aberdeen, West Point, Kosciusko, and Oxford, where they were reported as abundant on dahlia blooms.

FERN

FERN SCALE (Hemichionaspis aspidistrae Sign.)

Mississippi H. Dietrich (October 20): The fern scale practically destroyed all the ferns at one greenhouse in Lucedale.

GLADIOLI

GLADIOLUS THIRIPS (Taeniothrips gladioli M. & S.)

New York

E. M. Eastman (October 9): Specimens of the gladiolus thrips have been received from Rochester. From past reports this pest seems to have been quite general throughout the State.

A THIRIPS (Taeniothrips atratus montanus Priesner)

Massachusetts

E. R. Sasser (September 26): Thrips that were sent to J. R. Watson, September 1 from gladiolus, from Longmeadow, Mass., were determined as the European thrips Taeniothrips atratus montanus. Dr. Watson says that this species is a very common thrips in Europe. "It looks very much as if it may have been introduced in gladiolus bulbs. This has never been recorded from this country before. This may possibly prove to be quite a pest on gladiolus. It seems rather peculiar that our introductions should be of the variety montanus, which is confined to Austria and the Balkans, rather than the common European species".

LILAC

GIANT HORNET (Vespa crabro L.)

Connecticut

E. P. Felt (October 23): The European hornet has been exceptionally abundant in several localities in the vicinity of Stamford. They attracted notice mostly because they injured lilac branches.

LILIES

BULB MITE (Rhizoglyphus hyacinthi Bdv.)

Ohio

E. W. Mendenhall (October 15): Lily plants in one of the greenhouses in Greenville are badly affected with bulb mites. The plants are not making any growth but are looking very sickly. Lilies being propagated in one of the greenhouses in Springfield are so badly infested that the plants were taken up and destroyed; also a greenhouse grower in Columbus reports the same thing.

SNAPDRAGON

BUCKEYE BUTTERFLY (Junonia coenia Hbn.)

Mississippi

C. Lyle (October 22): Larvae of Junonia coenia were collected from snapdragons at Greenwood on September 25.

INSECTS ATTACKING MAN AND
DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicinae)

Oregon

E. H. Stage (September 18): Mosquitoes are abundant in certain situations about the Portland area at this time. Anopheles punctipennis Say and A. maculipennis Meig. are readily taken from widely scattered waters of various types. Culex tarsalis Coq. and C. pipiens L. are abundant about polluted water. Adult Aedes vexans Meig. from mid-June broods still persist and are very bothersome near Waukena Falls.

SAND FLIES (Culicoides sp.)

North Carolina
and
South Carolina

D. G. Hall (October 22): The abundance of the two dominant summer salt-marsh sandflies, C. melleus Coq. and C. furens Poey, is rapidly decreasing, their place being occupied by C. canithorax Hoff. which will be the most abundant during the fall season.

Florida

J. B. Hull and W. E. Dove (October 12): Sand flies (Culicoides sp.) were abundant about the Keys and islands in the vicinity of Tampa during different times of the year. This section is noted for tarpon fishing and the tourist fishermen suffer the effects of sandfly bites. C. melleus, C. furens, and other species of yellow sand flies are most abundant in the littoral regions of Florida.

EYE GNATS (Hippelates spp.)

South Carolina

W. E. Dove (October 20): With the dry autumn there has been a marked decrease in the number of eye gnats in the vicinity of Charleston. During last autumn they were especially abundant during the rainy season.

Georgia

J. B. Hull and W. E. Dove (October 9): Eye gnats, H. pusio Mall., were most abundant at Wilmington Island in the vicinity of a small ditch leading from an outside toilet.

Florida

J. B. Hull and W. E. Dove (October 10): According to residents in the vicinity of St. Augustine, eye gnats are very annoying to man in these parts. They occur during the warmer months of the year.

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

South Carolina F. M. Prince (October 15): With the advent of the very high tides of this month there was an abrupt decline in the number of stable flies at Folly Beach. Previous to this time mules could not graze. They went into yards having shade and into garages, leaving hundreds of the flies in such places. Occasionally some of the flies bite man, but there was a decided preference for the mules.

Florida W. E. Dove and J. B. Hull (October 17): Previous to the recent spring tides dog flies were very common along the coasts near Jacksonville. The flies were not abundant away from the coasts. Dog flies are sometimes very annoying on Mullet Key and about Fort DeSoto. A few raccoons occur on the island.

Missouri L. Haseman (October 22): Stable flies have been unusually abundant for October at Columbia, also in the southeastern part of the State.

HORN FLY (Haematobia irritans L.)

Missouri L. Haseman (October 22): The horn fly has been unusually abundant for October at Columbia, also in the southeastern part of the State.

HORSE

HORSE BOTFLY (Gastrophilus intestinalis DeG.)

North Carolina R. W. Leiby (October 22): An unusual complaint for our Insect Survey records in this State was made on October 5. The remnants of an adult were identified as the horse botfly. A veterinarian reported a farmer as declaring that the insects were stinging his mules and causing consternation in the pasture field.

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

I N S E C T S

TERMITES (Reticulitermes sp.)

General T. E. Snyder (September): During the month of September 124 cases of damage by termites were reported to the Bureau of Entomology. The following list gives the number of cases

reported from each State:

Alabama, 11	Louisiana, 4	Pennsylvania, 4
Arkansas, 4	Maryland, 1	South Carolina, 6
California, 5	Mississippi, 1	Tennessee, 7
Connecticut, 2	Missouri, 5	Texas, 8
District of Columbia, 5	New Jersey, 2	Virginia, 15
Florida, 13	New York, 3	West Virginia, 2
Georgia, 6	North Carolina, 6	Wisconsin, 1
Indiana, 3	Ohio, 3	Philippine Islands, 1
Kentucky, 1	Oklahoma, 4	Hawaii, 1

Indiana J. J. Davis (October 24): Termites were destructive to buildings at Attica and Lafayette, early in October. At Knox (September 26) termites were attacking a corn crib and were also eating into the ears of corn.

Nebraska M. H. Swenk (October 26): The termite R. tibialis Banks was reported destroying fruit trees in Harlan County during the third week in October.

Missouri L. Haseman (October 22): Numerous complaints about termites have been received from all over the State, where the pests are working in houses and in one case in soft maple shade trees.

Alabama J. M. Robinson (October 21): Termites are abundant in an apartment building at Auburn and in houses at Decatur and Mobile.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi C. Lyle and assistants (October): The Argentine ant situation at Hattiesburg is quite distressing. Complaints are coming in from every part of the infested area.

A YELLOW ANT (Lasius interjectus Mayr)

Kentucky W. A. Price (October 24): Winged forms of L. interjectus were taken in large numbers from foundation timbers of a house at Carlisle.

SMALLER BAMBOO BORER (Dinoderus minutus Fab.)

Massachusetts E. P. Felt (October 23): A cosmopolitan powder-post beetle, D. minutus, was received from the eastern part of the State, where it had been working in the bamboo frame of an ornamental screen.

CARPET BEETLE (Anthrenus scrophulariae L.)

California H. Ryan (October 17): The buffalo carpet beetle is more numerous than usual.

E. O. Essig (October 20): Larvae are unusually abundant in houses in the southern part of the State this summer and fall.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Ohio T. H. Parks (October 24): Injury to upholstered furniture was quite severe in a home in Columbus visited in early October. Both beetles and larvae were present.

Alabama J. M. Robinson (October 21): The cigarette beetle is very abundant on furniture at Sheffield.

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis L.)

South Dakota H. C. Severin (October): The saw-toothed grain beetle is very abundant in many sections of the State.

Nebraska M. H. Swenk (October 26): Reports of infestation of stored grains, especially stored wheat, with the saw-toothed grain beetle and other stored grain pests continued to come in during the first half of October.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

South Dakota H. C. Severin (October): The confused flour beetle is very abundant in many sections of the State.

BEAN WEEVIL (Mylabris obtectus Say)

Kentucky W. A. Price (October 24): Bean weevil complaints have been received from Elizabethtown, Lexington, Corbin, Glasgow, Paducah, Litchfield, Webster, Berry, Defoe, Mayo, Bardwell, Hanson, and Bryanville.

GRANARY WEEVIL (Calendra granaria L.)

South Dakota H. C. Severin (October): The granary weevil is very abundant in many sections of the State.

A SILVERFISH (Lepisma sp.)

North Carolina R. W. Leiby (October 22): Many more complaints than the usual number have been received due to the presence and injury by silverfish in houses. The complaints have extended throughout the summer.

Kentucky W. A. Price (October 24): Silverfish are damaging wall paper at Louisville, Lexington, and Bowling Green.

PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from the News Letter for September, 1931.
(No. 10, Issued October 1, 1931.)

Not for publication

PINK BOLL WORM (Fectinophora gossypiella Saund.)

Within the regulated area $82\frac{1}{2}$ bushels of trash were examined in the Salt River and Gila Valleys of Arizona. The results were all negative. In the Big Bend of Texas the first bale was ginned on August 15, and 39 larvae were taken from three-fourths of a bushel of trash. The second bale was ginned on August 29, and from one-third bushel of trash 353 pink boll worms were taken. On August 31, 471 pink boll worms were taken from $1\frac{1}{4}$ bushels of trash. This makes a total of 854 specimens taken from $2-1/3$ bushels of trash.

The regular weekly infestation counts from 23 selected fields in Maricopa and Pinal Counties, Ariz., were continued throughout the month of August. A total of 23,600 bolls and 5,000 squares were examined; also 1,690 bolls from fields which had been found to be infested during May and June. The results of all the above examinations were negative. In the Tucson area 875 acres were inspected. This makes 2,100 acres which have been covered. There still remain some 400 acres to be inspected, which will complete the entire acreage in this district.

JAPANESE BEETLE (Popillia japonica Newm.)

For the first time since the Japanese beetle has spread to the blueberry sections of the pine barren region of New Jersey, it has been necessary to fumigate blueberries as a requirement for their certification.

This season's scouting activities in the vicinity of the clay pits centering around New Brunswick, N. J., revealed initial infestations in practically all of those establishments in which Japanese beetles had not heretofore been found.

That Japanese beetles in Connecticut fly high was shown when 69 were collected off the roof of a clubhouse in New London. Report received by one of the men looking after the traps in that city, indicating presence of beetles about the club, led to the search which captured the specimens. Two beetles also were caught in traps placed on the roof of the clubhouse.

GIPLY MOTE (Portheiria dispar L.)

Eleven regular scouting crews were engaged throughout August inspecting extensive wooded areas in six townships in the Adirondack region of the barrier zone, namely, Chesterfield, Crown Point, Essex, Ticonderoga, Westport, and Willsboro, N. Y. Seven New York Conservation Department crews were scouting in the townships of Canaan, Austerlitz, and Hilldale. No indications of gypsy moth infestations were reported by either Federal or State forces operating in the barrier zone during August.

Four New York State crews were scouting in the township of North Hempstead, Nassau County, Long Island, and have reported the discovery of one infestation, but inasmuch as no clean-up work has yet been done, it is impossible to determine the extent or intensity of this infestation.

MEXICAN FRUIT FLY (Anastrepha ludens Loew)

Operation of approximately 1,100 fly traps in the groves on the American side of the Rio Grande resulted in the capture of two specimens of A. pallescens Coq. during the month of August. One of these was taken in a grove near Mission on the 11th, and the other was taken in a grove on the outskirts of Brownsville on the 8th. It will be recalled that an adult was taken in a grove south of Mission on July 14. Following the finding of these specimens a thorough examination was made of fruits and berries growing in the Valley in an effort to locate the host food, but all inspections gave negative results.

The operation of 177 traps in 58 premises in Matamoros resulted in the taking of 23 adults. Adults were taken in four premises which had not been previously reported as infested.

Inspection of fruit arriving in the market at Matamoros from points in the interior of Mexico revealed infestations in apples, oranges, peaches, and pears. A total of 45 larvae were taken from these fruits during the month.

NARCISSUS BULB FLY (Merodon equestris Fab.)

The Washington inspection house reports an interesting discovery of a larva in a small narcissus bulb (Narcissus bulbocodium conspicuus) not more than 2 cm. in total length. This larva was found in a shipment arriving September 5 from London, England. The occurrence of larvae in such small bulbs is so unusual that photographs have been made of the specimen.

INSECT CONDITIONS IN MEXICO FROM JANUARY TO JUNE 30, 1931.

By Ing. Julio Requielme Inda,
Chief, Department of Technical Publications,
Office of Federal Service for the Defense of Agriculture,
San Jacinto, D. F., Mexico.

In the vicinity of Coatepec, Vera Cruz, there was a notable decrease in the fruit fly Anastrepha ludens Loew on orange. The mango continues to be attacked by this insect, but each time to a less degree. This insect was observed on mango, guava, plum, and orange in Coscomatepec, Vera Cruz. It was common on oranges and custard apples (Annona) in Iguala, Guerrero, at all times but it has not caused as much damage as usual this year on account of careful watch for insects and good cultivation. Observed on orange in Putla, Oaxaca.

Anastrepha striata Schiner is common at all times on guava in Iguala, Guerrero. It has not caused as much damage as usual this year on account of careful watch for insects and good cultivation.

Anastrepha fratercula Wied. was observed attacking a variety of fruits, especially when uncared for, in the vicinity of Merida, Yucatan. Common at all times on Nanche (Brysonima crassifolia) and plum in Iguala, Guerrero. It has not caused so much damage this year as usual on account of careful cultivation and a close lookout for insect pests.

Alevrodes citri Riley, & Howard was found on leaves of orange in the vicinity of Coatepec, Vera Cruz.

Stephanoderes coffeae Hog. was observed attacking the coffee tree in the vicinity of Coatepec, Vera Cruz.

Dactylopius destructor Comst. was observed attacking the coffee tree in Coatepec, Vera Cruz.

Anthonomus grandis Boh. was common on all Malvaceae grown in the Grijalva River Valley from Chiapa de Corzo to Concordia, Chiapas. It began its depredations in March. It was also present in the vicinity of Acapulco, Guerrero, and was observed in all parts of Oaxaca, where cotton is grown, principally in Santo Domingo during March.

Alabama argillacea Hbn. was observed on cotton in the vicinity of Acapulco, Guerrero.

Diatraea saccharalis Fab. was observed on sugarcane in Iguala, Guerrero.

In the State of Oaxaca, Sphenophorus incurrens Gyll. occurs generally on sugarcane the year round, but it does no very considerable damage.

Heilipus lauri Boh. was observed on avocado in March in Santa Ana Tlapacoyan, Oaxaca, and also in Iguala, Guerrero.

Trioza koebelei Kirk. was observed on avocado in Coscomatepec, Vera Cruz.

Rhynchophorus palmarum L. is an endemic species on the Island of Carmen, Campeche, and causes considerable damage to the coconut. Coconut in Iguala, and Acapulco, Guerrero, is attacked by this insect.

Scyphophorus acupunctatus Gyll. is common on the seedlings of Agave in Campeche and does considerable injury, especially to plants in uncared-for nurseries. It is also common in Yucatan.

Azochis grypusalis Walk. was observed on fig trees in February in Iguala, Guerrero.

Toxotrypana curvicauda Gerst. attacked papaya in the State of Oaxaca.

Cosmopolites sordidus Germ. was observed attacking banana in Coscomatepec, Vera Cruz.

There was an abundance of the woolly aphid (Eriosoma lanigerum Hausm.) on apples in Vigas, Vera Cruz.

Heliothis obsoleta Fab. attacked corn from the month of March in Acapulco, Guerrero, and also in the vicinity of Tuxpan, Vera Cruz.

Laphygma sp. We have been informed that some caterpillars, possibly Laphygma sp. and Prodenia sp., are damaging vegetable gardens and fruit trees on the Island of Cozumel, Quitana Roo., but we do not have information as to the amount of injury. I. frugiperda Hbn. attacked corn in Iguala, Guerrero; and in Mazapa de Madero, Mariscal, and Jiquipilas, Chiapas.

Agrotis c-nigrum L. caused considerable damage to young corn in the vicinity of Tuxpan, Vera Cruz. This cutworm attacked corn in March in many parts of the State of Oaxaca.

White grubs (Phyllophaga spp.) attacked corn and broad beans in Vigas, Vera Cruz, and also in Iguala, Guerrero, during February.

Macroductylus sp. attacked growing corn in the vicinity of Tuxpan, Vera Cruz. Corn and broad beans in Vigas, Vera Cruz, were attacked.

The larvae of Lamellicorn beetles, probably Strategus sp., attack corn in Coquematlan and Cucuhtemoc, Colima. Strategus julianus Burm. is very abundant and injurious in Soyalo, Chiapas.

Atta fervens Say is very injurious to oranges in the vicinity of Alvaro Obregon, State of Tabasco. This ant attacks seed corn at planting time in the vicinity of Tuxpan, Vera Cruz. It also attacked various plants in the vicinity of Merida, Yucatan, but did not cause any serious damage. It was noted as attacking corn in Alvarez and Cuauhtemoc, Colima. This ant attacked corn in Iguala, Guerrero, during February.

Epilachna corrupta Muls. has damaged frijoles (beans) in Alvaro Obregon, Tabasco, to the extent of 10 per cent of the crop. In Coquematlan and Cucuhtemoc, Colima, this insect attacked frijoles. In the State of Oaxaca frijoles were attacked by E. corrupta and also by another species of Epilachna.

Anthonomus eugenii Cano was occasionally observed damaging peppers in Iguala, Guerrero.

Potatoes in Vigas, Vera Cruz, suffered an attack by Lycophotia margaritosa saucia Hbn. producing a loss of from 8 to 10 per cent of the crop.

Murgantia histrionica Hahn attacked cabbage in the State of Oaxaca.

Melittia satyriniformis Hbn. attacked squash in Iguala, Guerrero, in February.

Heliothis virescens Fab. caused considerable damage to tobacco in Acapulco, Guerrero.

INSECT CONDITIONS IN PORTO RICO DURING SEPTEMBER, 1931

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico

The sugarcane borer (Diatraea saccharalis Fab.) was worse, according to S. C. McCall, local Manager of the United Porto Rican Sugar Company on Vieques Island, on the 1931 crop, a total of about 3,500 acres, than it was during the two previous years. He stated that Japanese cane, usually supposed to be somewhat less infested than other varieties, was the worst infested of all during this past year.

Adults of Dyscinetus barbatus Fab. began appearing again at lights on September 2 at Isabela (G.N.W.).

The yellow sugarcane aphid (Sipha flava Forbes) was reported on September 27 by S. C. McCall to have been absent on Vieques Island during the past year as far as he could observe. Its absence or at least scarcity was probably due to much more than normal rainfall on that Island.

The leafhopper Protalebra brasiliensis De Long, known to be a minor pest of sugarcane, has continued abundant throughout the month on Bidens pilosa at El Morro in San Juan.

The coffee stem borer (Psychonoctua personalis Grote) was received under date of September 29 in injured branches of coffee trees from Corozal with the statement that considerable damage was being done to the trees by the hollowed-out branches being broken off when they were bent down by the pickers.

The coffee leaf miner (Leucoptera coffeella Staint.) was generally distributed and quite abundant on a large coffee farm in the vicinity of Jayuya, visited September 9-10. Apparently not much damage was being done, however, to bearing trees.

The green scale (Coccus viridis Green) was observed September 9-10, to be general, though not very abundant on a large coffee farm near Jayuya, the younger leaves and shoots being more commonly infested as usual.

The coconut scale (Aspidiotus destructor Sign.) was reported by Mendez, Coconut Specialist at the Insular Station, as being not nearly so abundant at Cabo Rojo during September as it was five or six months ago. As far as could be observed, on September 26 practically every coconut palm on Vieques Island was more or less infested with the coconut scale, those towards the eastern and drier end of the Island especially so, many palms having a sickly and yellow appearance and in some cases even the fruits being almost encrusted with the scales.

A brown aphid was abundant on a number of the tender shoots and young leaves on a fairly large grape arbor at Puerto Real, Vieques Island, on September 28.

Adults of Diaprocnes spengleri L. were less abundant than a short time ago at Isabela, only one or two egg clusters being found in several hours' search in the citrus nurseries, whereas many were found towards the end of August in the same place in a much shorter time (G.H. Wolcott).

An undetermined snail was reported by T. H. Twight of the Insular Experiment Station as skeletonizing the leaves in a seed-bed of several thousand grapefruits at the experiment farm at Trujillo Alto the last of August. The seedlings were not more than 6 inches in height and were generally infested, about 5 per cent being killed before control measures could be adopted.

The papaya fruit fly (Toxotrypana curvicauda Gerst.) was not found in several fruits cut open on a farm near Ponce on September 9. The owner stated that no infested fruits had been noticed for several weeks, whereas formerly they had been heavily infested. As previously reported, many infested fruits had been destroyed and I suspect that this resulted in greatly reducing the infestation in this planting.

The scale Pseudonarclatoria ostreata O'ell. was abundant on a number of grapefruit trees near Ponce on September 9.

The cassava shoot borer (Lonchaea chalybea Weid.) was received under date of October 2 from the local Agricultural Agent at Bayamon who stated that for some little time the insect had been very common in all the cassava plantings in the district and had considerably reduced the yield.

By the early part of the month most of the cotton had been harvested around Isabela and during the month larvae of the pink boll worm (Pectinophora gossypiella Saund.) were abundant in alternate hosts, especially in the bolls of the mague tree (Montezuma speciosissima) (G.N.W.).

Only one moth of the bean pod borer (Eticlla zinckenella Treit.) was taken during three nights' collecting, September 25-27, at Puerto Real, Vieques Island.

The moths of the bean leaf folder (Macoleia indicata Fab.) were fairly common at light September 25-27 at Puerto Real, Vieques Island.

The bean aphid (Aphis rumicis L.) was found on September 8 in considerable numbers on many of the vines on the patch of gold limas at the Rio Piedras Station; in some cases the long stems of the vines were crowded and there was a light to moderate infestation on many leaves.

The bean lacebug (Corythucha gossypii Fab.) was present in abundance September 8 at the Station. The insect was observed in moderate numbers on a number of castor bean plants in different parts of the Island, September 26 - 28.

A mealybug, Pseudococcus sp., was found September 8 generally though lightly distributed throughout a fair-sized patch of pole limas at the Station on both leaves and stems.

Moths of the melon worm (Diaphania hyalinata L.) were fairly common at light during three nights' collecting, September 25 - 27, at Puerto Real, Vieques Island.

The small black squash bug (Pycnoderes incurvus Dist.) was fairly common at light during three nights' collecting, September 25- 27, at Puerto Real, Vieques Island.

The Hawaiian beet webworm (Hymenia fascialis Cramer) continued to be abundant throughout the month on the weed Gonohraena dispersa at El Morro in San Juan.

Grasshoppers did considerable injury to several large tomato plants grown for experimental purposes in the greenhouse at the Rio Piedras Station, during the latter part of the month. The injury was by young green nymphs. Adults have not as yet been obtained.

Adults of the sweetpotato weevil (Cylas fornicarius Fab.) were not uncommon during three nights' collecting at light at Puerto Real, Vieques Island, September 25 - 27. Arturo Riollano, the local Agricultural Agent, stated that he had observed the insect as generally distributed and very injurious since he had been on the Island from September, 1930.

The corn ear worm (Heliothis obsoleta Fab.) infested practically every ear of sweet corn at Isabela during the month (G.N.W.).

A leaf beetle, Metachroma antennalis Weise/^{was received} from the Aguirre Sugar Company ~~was~~ under date of September 4 for determination. The beetles were said to be present in enormous numbers and doing great damage to rose bushes. Out of over 1,000 good-sized rose bushes over 400 had been killed, the beetles first eating the flowers, next the leaves, and finally gnawing off the bark of the woody parts. The beetles first appeared in the spring of 1929 and were present the following year and this year from April into September. It was stated that when disturbed the beetles drop readily. This species was originally described from Porto Rico in 1885 by J. Weise and has apparently not been reported outside of the Island. Here it has been recorded as rather badly attacking cotton at Quebradillas in June, 1922, and was found between leaves and in spider nests on various plants on the beach at Arecibo in May, 1923.

The chinch bug, Blissus leucopterus Say, was reported by A. J. Harvey (who submitted specimens for determination) as causing severe damage in a large pasture of molasses or "malojillo" grass at Santurce on September 12, many large areas having been killed out. Mr. Harvey also stated that he had recently observed similar injury in a large pasture of the same grass a little east of Carolina.

A horn fly (Haematobia irritans L.) was observed to be very abundant on all the oxen in Vieques Island on September 26-28, and S. C. McCall stated that it had been worse this year than usual. One bull was reported covered with flies and in a greatly weakened condition if indeed not dying. The considerably more than normal rainfall may be partially responsible but in Porto Rico the pest is ordinarily worse on the South Coast which has considerably less rainfall than the North Coast.

The bostrychid beetle Rhizopertha dominica Fab. (R. pusilla Fab. A. J. Mutchler det.) according to Dr. Wm. A. Hoffman of the School of Tropical Medicine in San Juan, has been a bad pest in the books in the library for the past two years.

INSECT CONDITIONS IN HAITI DURING JULY, 1931

Dr. J. G. Myers
Imperial Institute of Entomology
Trinidad, B. W. I.

The sugarcane butterfly (Calisto pulchellus Lathy) was observed on July 29 heavily infesting about three acres of sugarcane in a very damp situation near Cape Haiti in Limbe Valley. Almost every leaf was more or less eaten by the caterpillars.

The brown ant Solenopsis geninata Fab. was observed on July 31 to have killed about 20 per cent of the young grapefruit trees (planted in January) on 200 acres at Cape Haiti by ringing the bark at the base.

An undetermined mirid (reddish adults) was observed on July 29 injuring a small patch of upland rice between Cape Haiti and Limbe. The bug was abundant in spots, causing a yellowish or whitish mottling of the leaves, and the infested patches were considerably stunted. The same insect was also present in two other localities far from rice, on the grass Paspalum distichum, which is probably its natural food plant.

A black and spiny pentatomid bug was present and breeding on a small patch of upland rice between Cape Haiti and Limbe.

INSECT CONDITIONS IN THE DOMINICAN REPUBLIC DURING SEPTEMBER, 1931

Juan Gomez Menor

Entomologist of the Agricultural Experiment Station, Moca, Dominican Republic

Blissus leucopterus Say is very rare and only found on sugarcane.

White grubs (Phyllophaga spp.) are very seriously damaging the roots of coffee at Samana.

The corn lantern fly (Peregrinus maidis Ashm.) is very injurious to rice in the northern part of the Republic.

Rice is infested by the ortalid Euxesta annonae Fab. which produces a stem rot by admitting bacteria.

Rice roots were attacked by Pseudococcus sp.

Mormidea ypsilon L. produced "empty grain" in rice.

Ischnorhynchus championi Distant is injurious to cotton at Bonao and Moca.

Lepidosaphes gloverii Pack. is present but scarce on citrus at Moca and Samana.

Toxoptera aurantii Boyer was found on the leaves of Citrus bigaradia, C. decunana, and other species. It is controlled to some extent by the fungus Acrostalagnus aphidum.

Honaledra sabalella Cham. is very abundant on coconut palm and Orcodoxa caribea at Moca and Santiago but very scarce in Samana.

Coconut is severely infested by scale; Aspidiotus perniciosus Const., in Samana. This scale is slightly checked by Scymnus panamensis Gorham, Aspidiotiphagus citrinus Craw., and Aphelinus chrysomphali Mercet.

Coconut is also infested in a minor way by Ischnaspis longirostris Sign., Diaspis boisduvali Sign., and Pseudococcus nipae Mask. in Samana.

The green scale, Coccus viridis Green, is very abundant on Coffee and Psidium guava, but is well controlled by the fungus Cenhalosporium lecanii.

The moth Erinnys ello L. is very common on manihot (cassava). The larvae are parasitized by Apanteles flaviventris Cress. and the eggs by Trichogramma sp.

The Cuban-laurel thrips (Gynaikothrips uzeli Zimm.) was very numerous on Ficus nitida at Bani, San Jose de Ocoa, and Moca.

Ornenis sp. is injurious to Cinnamomum ceylandicum in Jamaica.

Constockiella sabalis Const. is very abundant on Sabal domingensis and other palms at Hato de Yaque and San Francisco de Macoris.

Asterolecanium lanceolatum Green was attacking leaves and stems of Bambusa sp. in Samana.

Asterolecanium bambusae Bdv. was found on the leaves and stems of Bambusa in Moca.

The San Jose scale (Aspidiotus perniciosus Const.) is attacking papaya and guava in Samana.

Corizus hyalinus Fab. was found attacking tomato at Moca.

The deer fly Chrysops costatus Fab. is very troublesome to man and horses in wet places in Samana and Moca.

Solenopotes capillatus Enderlein is very abundant on cattle in Bonao.

The biting goat louse (Bovicola canrae Garlt.) is prevalent on goats throughout the Republic.

The hog louse (Haematopinus suis L.) is very numerous in Moca Bani.

Gliricola distincta Ewing is found on guinea pigs.

The small body hen louse (Menopon pallidum Nitz.) is very prevalent on domestic poultry throughout the Republic.

Columbicola columbae L. was found infesting pigeons in Santo Domingo City.

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