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INSECT PEST SURVEY BULLETIN

Vol. 14

June 1, 1934

No. 4

THE MORE IMPORTANT RECORDS FOR MAY 1934

Early in May grasshoppers started hatching in the Great Plains region and by the end of the month the poisoning campaign, which is being carried on in cooperation with the States, was well under way.

Mormon cricket outbreaks were recorded from Idaho, Montana, Wyoming, and Utah. Two outbreaks of the coulee cricket are occurring in limited areas of Washington, one at Pasco, and the other near Wenatchee.

Heavy flights of the beet webworm and alfalfa webworm were recorded about the middle of the month from North Dakota, south to Kansas, and westward to Colorado.

The chinch bug outbreak has developed into what is probably the most serious outbreak in the past 50 years. The heavy drought over much of the chinch bug belt has prematurely dried the small grain and forced an earlier migration into the corn in some places.

The pea aphid was destructive over a wide area extending from the Gulf northward to Nebraska and Wyoming.

The first adults of the codling moth were observed in the Hudson River Valley during the second week in May. They were observed in Delaware and Virginia during the first week in May. In the West the first moths were observed during the middle of April in Colorado and the Pacific Northwest, and in Kansas during the first week in May. The peak of emergence had practically passed in all sections by the end of May.

One of the most severe outbreaks of the grape leafhopper ever recorded in the Napa and San Joaquin Valleys of California was reported this year.

Spring counts of Japanese beetle larvae indicate that this insect suffered no abnormal winter mortality during the severe winter of 1933-34.

Single individuals of Brood VIII of the periodical cicada were recorded from Maryland in the vicinity of Washington, D. C. These records are well without the normal range of this brood, although previous records indicate that scattered individuals have been found in this region.

During the last week in April Mexican bean beetle adults were first observed in the eastern Virginia trucking section, and during the middle of May in Maryland. By the end of the month the insect was appearing in numbers in the South Atlantic States.

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SPECIAL REQUEST OF OUR COLLABORATORS

If you find elms with wilting leaves or yellow or brown leaves accompanied by brown streaks in the young wood, collect about 6 specimens of twigs 1/4 to 1 inch in diameter and about 6 inches in length, which show the sapwood discoloration, and mail them to the Dutch Elm Disease Laboratory, Room 207, Post Office Building, Morristown, N.J., together with a statement of the exact location of the trees.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Michigan. R. Hutson (May 21): Grasshoppers are very abundant and are hatching in most of the infested areas.
- Minnesota. A. G. Ruggles (May 28): Grasshoppers are hatching rapidly. Very little poisoned bait has been used and no damage has been reported.
- North Dakota. J. A. Munro (May 19): Hatching in general began about one week earlier than usual.
- South Dakota. H. C. Severin (May 8): Melanoplus bivittatus Say began hatching on May 1.
- Iowa. C. J. Drake (May 28): Grasshoppers are generally distributed in northwestern Iowa. County agents report considerable damage in small grain fields. Poisoned bran mash is being used in several counties. H. E. Jaques (May 24): Grasshopper eggs are abundant in western Iowa.
- Nebraska. M. H. Swenk (May 15): Grasshoppers began hatching early in May in the heavily infested area which includes Keyapaha, Boyd, Rock, Holt, Knox, and Cedar Counties, and the northeastern part of Cherry County and the northern part of Brown. The hatch, which is very heavy, was at its height by May 15 in pastures, hay lands, and along fence rows. Carloads of poisoned bait are being shipped into this section and spread. At the same time, grasshoppers have been hatching in southwestern Nebraska, especially in Hayes County, in abundance.
- Kansas. H. R. Bryson (May 24): In some sections of the State young grasshoppers are very abundant; they are moderately abundant at Manhattan.
- Oklahoma. C. F. Stiles (May 17): Grasshoppers are moderately abundant.
- Texas. F. L. Thomas (May 23): Grasshoppers are very abundant in pasture land and along the levee of the Brazos River bottom in Burleson County.
- Wyoming. C. L. Corkins (May 21): Grasshoppers are very abundant.
- Colorado. G. M. List (May 26): The infestation will be quite heavy in the

foot-hill areas and in some sections of the eastern plains area. Rather serious local outbreaks are occurring in Rio Blanco and in Montezuma Counties. The infestation is much more general over the entire State than it has been for a number of years.

Idaho. C. Wakeland (May 21): Baiting for grasshopper control is under way in most counties, 600 tons of bait having been shipped in to date.

Utah. G. F. Knowlton (May 8): Grasshopper nymphs are abundant in Box Elder County at Snowville, Lampo, west of Corinne, and at Blue Creek. (May 10): Grasshoppers are becoming more abundant in many parts of Davis and Tooele Counties. Some bait has been applied at Kaysville and Layton, in Davis County. (May 22): Several species are becoming mature. Adults of M. mexicanus Sauss., M. packardi Scudd., Aulocara ellioti Thomas, and Trimerotropis vinculata Scudd., were observed in the Valley from Grantsville to Timpie in Tooele County on May 18. Adults of T. vinculata, M. mexicanus, and A. ellioti, were observed on May 21 in Davis County at Centerville and Farmington. Grasshoppers are causing injury to crops in a number of localities.

C. J. Sorenson (May 26): M. bivittatus, Camnula pellucida Scudd., and M. femur-rubrum DeG. are very abundant over most of the State.

Nevada. Geo. G. Schweis (May 28): Grasshopper damage threatens to be the worst in years.

Arizona. C. D. Lebert (May 21): M. mexicanus is very abundant in Salt River Valley and a poisoning campaign is in full swing. We have mixed and delivered over 91-1/2 tons of bait and are putting it out at the rate of 6-1/2 tons per day. One complete application has been administered in Salt River Valley and we are now going over the ground the second time. A very good kill has been reported from all districts.

California. A. E. Michelbacher (May 22): On this date young nymphs were found in fair numbers. The species is probably M. differentialis Thos.

Canada. Daily Digest (May 28): It is estimated that about 48 percent of the total yield of crops in Western Canada is menaced by grasshoppers, and the present battle to save millions of dollars for agriculturists will be the greatest ever launched.

MORMON CRICKET (Anabrus simplex Hald.)

Wyoming. C. L. Corkins (May 21): An outbreak of the mormon cricket is occurring in Sheridan, Crook, Converse, and Johnson Counties. About 15,000 acres are infested, 10,000 of which are in Sheridan County. The crickets are about one third grown and are doing much damage.

Utah. G. F. Knowlton (April 30): Two outbreaks have been reported from forest areas in Millard County.

COULEE CRICKET (Peranabrus scabricollis Thom.)

Washington. E. J. Newcomer (May 18): Two rather severe outbreaks of the coulee cricket have occurred this spring, one near Pasco, in Franklin County, in the wheat fields, and the other near Wenatchee, Chelan County. With the cooperation of county agents and specialists from the State college, growers are making an effort to stop the invasion.

CUTWORMS (Noctuidae)

New Jersey. R. C. Burdette and B. F. Driggers (May 25): Cutworms have been unusually abundant and have caused considerable damage to newly set plants.

Illinois. W. P. Flint (May 22): Damage from cutworms, mostly the clay-backed (Feltia gladiaria Morr.) have been reported in many cases from spring-plowed clover and sweetclover ground. Fall-plowed ground seems to have almost completely escaped damage.

Tennessee. G. M. Bentley (May): Lycophotia margaritosa saucia Hbn., Agrotis c-nigrum L., A. ypsilon Rott., and F. ducens Walk. are very abundant.

Nebraska. M. H. Swenk (May 15): Inquiries concerning the control of cutworms were received during the first week in May from central and western Nebraska, especially from Greeley, Sherman, Garden, and Box Butte Counties.

Utah. G. F. Knowlton (May 10): Cutworms have caused considerable injury to tomato seedlings in the northern part of Davis County. Plants in a few hotbeds have also been damaged.

California. S. Lockwood (May 1): During the latter part of April the variegated cutworm (L. margaritosa Haw.), and an unidentified species damaged Valencia oranges in one grove in Tulare County. Young wood and blossoms for the 1935 crop were destroyed over about 10 acres and later the worms ate the ripe fruit. From one half to two field boxes per tree were destroyed.

BEEET WEBWORM (Loxostege sticticalis L.)

Minnesota. A. G. Ruggles (May 29): Moths of the sugar-beet webworm have been extremely abundant across the central part of the State.

North Dakota. J. A. Munro (May 6): Adults are moderately abundant at Wahpeton, Richland County, and at Fargo, Cass County.

Nebraska. M. H. Swenk (May 15): Reports were received from Furnas and Lincoln Counties the second week in May of a great abundance of first-brood moths in lawns and grasslands, presaging an outbreak in western Nebraska late in May and in June.

Colorado. G. M. List (May 26): Moths are flying in numbers sufficient to indicate a normal infestation in most of the sugar-beet areas. In some of the plain's areas in the eastern part of the State the infestation will be considerably heavier. Here the Russian thistle is one of the important hosts.

ALFALFA WEBWORM (Loxostege commixtalis Walk.)

Kansas. H. R. Bryson (May 24): Moths of the alfalfa webworm (L. commixtalis) are reported as very abundant in pastures, grasslands, and weed patches at Gretna, Phillips County, Garden City, Finney County, Bird City, Cheyenne County, and Hoxie, Sheridan County.

Colorado. G. M. List (May 26): The flight of moths in northern Colorado was rather light this year. However, in the Arkansas Valley the moths occurred in such numbers that the pest will undoubtedly be of considerable economic importance.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa. C. J. Drake (May 28): Unusually large numbers of moths have been found in alfalfa fields during the past week, indicating grave danger of a serious webworm infestation in alfalfa.

WHITE GRUBS (Phyllophaga spp.)

Vermont. H. L. Bailey (May 26): Adults are extremely abundant about lights at Montpelier, Washington County.

Maryland. E. N. Cory (May 25): Adults are reported as injurious in Baltimore City and Baltimore County.

Virginia. W. J. Schoene (May 23): White grubs are very abundant, many complaints of injury to shrubs and trees in the Bluegrass Section having been received, also many reports regarding injury to lawns and pastures. The beetles are injuring oak trees and English walnut trees in Prince William County.

Pennsylvania. H. E. Hodgkiss (May 23): Adult emergence started in the central counties on May 4; heavy statewide emergence at peak on May 21; unusually heavy emergence. Records covering the past 16 years indicate that heavy emergence occurred in 1919, 1922, 1925, 1928, 1931, and 1934.

Ohio. T. H. Parks (May 24): May beetles have been unusually abundant, flying about trees. Some reports of oak leaves being cut off have been received.

Illinois. W. P. Flint (May 22): Moderate to rather light flights of June beetles occurred in central and north-central Illinois.

Kentucky. W. C. Price (May 24): The first beetles of the season were observed on May 1. The flight was heavy about Lexington until May 18. Foliage of many oak trees was badly damaged. Larvae have ruined many lawns at Paint Lick and Lancaster, Garrard County, and Lexington, Fayette County.

Wisconsin. C. L. Fluke (May 21): Adults of Brood C completely defoliated oak trees in Lafayette, and Iowa Counties. They are less abundant in surrounding counties.

South Dakota. H. C. Severn (May 9): Many requests have been received for information on control of June beetles working on trees and bushes, sometimes completely defoliating them.

Kansas. H. R. Bryson (May 24): White grubs are reported injuring strawberries near Manhattan.

Alabama. J. M. Robinson (April 30): Brown June beetles are very abundant, eating pecan foliage at Brundidge, Pike County.

Nebraska. M. H. Swenk (May 21): May beetles are very abundant.

WIREWORMS (Elateridae)

New Jersey. R. C. Burdette (May 25): Infestations of wireworms are heavy in some sections and light in other section of northern New Jersey.

California. A. E. Michelbacher (May 22): Wireworms are very abundant around Sutter Creek, Amador County.

A FALSE WIREWORM (Eleodes sp.)

California. C. S. Morley, Kern County Agr. Comn. Monthly News Bull. (May 1): Heavy infestation in parts of the county. The beetles hatched on uncultivated lands and migrated to cultivated fields. Severe damage to cotton and grapes has been reported. This is the first time serious damage has been done by this pest in a number of years.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (May 24): Bugs left their winter quarters and were flying to small grain fields during the first week of May. We expect serious damage to corn if the drought continues through June.

Illinois. W. P. Flint (May 22): The chinch bug situation is the worst since 1887, and probably worse than at any time in the history of the

State. Young bugs are just beginning to hatch. Owing to the large numbers of overwintering bugs and the severe drought, much small grain has been killed by the old bugs. Unless heavy rains occur within the next 2 weeks, the chinch bug will destroy more than half of the small-grain crop.

Michigan. R. Hutson (May 22): Chinch bugs are moderately abundant.

Minnesota. A. G. Ruggles (May 28): Chinch bugs are very abundant in five townships in Goodhue County.

Iowa. C. J. Drake (May 28): The situation in Iowa is extremely serious, many thousand fields of small grain having been badly injured or totally destroyed. The infestation is extremely heavy in the three most southern tiers of counties.

Missouri. L. Haseman (May 23): Adults are killing barley and oats in places in central Missouri but doing little damage to wheat. This is the worst outbreak in 50 years.

Nebraska. M. H. Swenk (May 15): Chinch bugs came out of hibernation in great numbers in April and May and by the middle of May were concentrated chiefly in the wheat and barley fields, where egg laying was in progress. It is estimated that 30,000 Nebraska farms are threatened with chinch bug injury in June.

Kansas. H. R. Bryson (May 24): Chinch bugs are more abundant at Manhattan than at any time since 1926-27. The adults made their last flight into the wheat, barley, and oat fields on May 5 to 6. In fields where the wheat is thin the old bugs are causing some injury to the plants retarded in growth by the dry weather. Nymphs are coming out in large numbers but most of the eggs have not yet hatched. Sorghums and corn have been retarded in germination and growth, which adds to the seriousness of the situation, as the young plants will be quite small when the migration begins.

Oklahoma. C. F. Stiles (May 17): Chinch bugs are not so numerous as they were at this time last year, and very few complaints have been received.

GREEN BUG (Toxoptera graminum Rond.)

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Mississippi. C. Lyle (May 23): Specimens were received in May with a report that they were abundant on corn at Sarah, in Tate County.

Nebraska. M. H. Swenk (May 15): The spring grain aphid was seriously injuring wheat in southwestern Nebraska during the latter half of April. Banner and Hitchcock Counties were most heavily infested.

Kansas. H. R. Bryson (May 24): Although the green bug caused considerable injury to wheat and oats during April and the early part of May, the amount of wheat destroyed was not as great as was anticipated. Recent

rains have enabled plants to recover if they were not injured too severely. Reports of injury this month have come from La Cygne, Lebo, Redfield, Coffeyville, Sedgwick, and Wilson.

Oklahoma. C. F. Stiles (May 17): The green bug infestation has been quite severe throughout Noble County and in parts of Payne, Pawnee, Osage, Kay, Grant, Garfield, Kingfisher, and Logan Counties, the heaviest infestation being in Noble County. A questionnaire was sent out by the county agent of Noble County and the returns show that 22,484 acres of wheat are a total loss and 50,592 acres are damaged. The oat crop has been destroyed on 21,840 acres and damaged on 27,000 acres more, which is quite a severe loss to this county. The infestation is at a standstill and parasites are gaining rapidly.

GRAIN APHIDS (*Aphididae*)

Oregon. L. P. Rockwood (May 16): Grain aphids, Macrosiphum granarium Kby. and Rhopalosiphum prunifoliae Fitch; declined rapidly in April. Most of this decline was due to an epidemic of the entomogenous fungus Empusa aphidis, but this disease was aided in the final clean-up by syrphid and coccinellid larvae.

A LEAFHOPPER (*Dikraneura carneola* Stal.)

Idaho. R. W. Haegele (May 21): This insect is very common and, in many wheat fields extremely abundant in Gem County. Damage was severe enough in many fields to reduce yields.

RICE STINKBUG (*Solubea pugnax* Fab.)

Texas. F. L. Thomas (May 23): Unusually abundant in Franklin County, destroying some fields of oats.

CORN

SUGARCANE BEETLE (*Euetheola rugiceps* Lec.)

Mississippi. C. Lyle (May 23): Growers at Eupora, Webster County, and near Yazoo City, Yazoo County, have recently reported severe injury to young corn.

Tennessee. G. M. Bentley (May): An outbreak of this species, together with *Ligyris gibbosus* DeG., was observed in corn at Shelbyville, Bedford County, on May 10.

SOUTHERN CORN ROOT WORM (*Diabrotica duodecimpunctata* Fab.)

Georgia. T. L. Bissel (May 26): The budworm is very injurious on corn at Experiment, both on plots that had had a cover crop and on those without cover. First adults of new generation were observed on May 22.

Mississippi. C. Lyle (May 23): A stand of young corn on a farm at Toomsaba, Lauderdale County, was ruined in spots by larvae late in April. Injury was also reported recently by a grower at Louisville, Winston County.

FLEA BEETLES (Halticinae)

Tennessee. G. M. Bentley (May): Epitrix cucumeris Harr. was noted on young corn at Greenfield, May 10.

Iowa. H. E. Jacques (May 24): Corn flea beetles have been a severe pest in corn in Henry County, making replanting necessary in some fields.

Kansas. H. R. Bryson (May 24): Flea beetles caused considerable injury to the leaves of young corn at the agronomy farm at Manhattan.

CORN EAR WORM (Heliothis obsoleta Fab.)

Florida. J. R. Watson (May 21): The corn ear worm is very abundant but no more so than usual.

Alabama. J. M. Robinson (May 22): The corn ear worm is moderately abundant at Auburn; adults observed, and larvae seen on young corn.

SOD WEBWORM (Crambus sp.)

South Carolina. W. C. Nettles (May 24): This insect was injuring corn in Chesterfield County and also damaging young cotton in Oconee County.

Iowa. C. J. Drake (May 28): Sod webworms are unusually abundant and widely distributed. Large numbers of worms have been found in many fields in southern Iowa during the past 2 weeks.

ALFALFA

ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. C. J. Sorenson (May 26): The alfalfa weevil is very abundant in Cache, Box Elder, and Utah Counties.

Nevada. Geo. G. Schweis (May 28): On the whole, damage has been less than for several years past. However, in some section the damage was severe enough to justify control measures. Some airplane dusting was done near Reno with good results.

California. A. E. Michelbacher (May 22): The alfalfa weevil is rather difficult to find throughout most of the Tracy area. Only in the region about Vernalis could the pest be collected in any numbers. There in one field an average of 48 adults and 3 larvae were collected per 100 sweeps, while in another an average of 29 adults and 2 larvae were taken.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Maryland. E. N. Cory (May 25): Clover leaf weevils are numerous in Harford and Kent Counties.

PEA APHID (Illinoia pisi Kalt.)

Alabama. J. M. Robinson (May 22): The pea aphid is very abundant. It has destroyed 20 acres of Austrian peas at Vincent, Shelby County.

Mississippi. C. Lyle (May 23): Severe infestations of aphids were reported on English peas by growers at West, in Holmes County, on May 19.

Nebraska. M.H. Swenk (May 15): During the period from April 11 to May 7 there was a severe outbreak in the alfalfa fields in southeastern and southern Nebraska. Alfalfa was so seriously injured that in thousands of fields the first cutting of hay was lost. Myriads of larvae of Hippodamia convergens Guer. were in the fields and by the end of the first week in May had largely gained control of the aphid.

Kansas. H. R. Bryson (May 24): The pea aphid has been very abundant in alfalfa in the eastern half of the State. The infestations were quite general over the fields and the first crop was considerably injured. By May 7 practically all of the aphids had disappeared, owing to the control effected by H. convergens.

Wyoming. C. L. Corkins (May 21): The pea aphid has done much damage in southeastern Wyoming, but is now under fairly good control.

Colorado. G. M. List (May 26): The outbreak on alfalfa has subsided. Control has been due largely to the work of H. convergens.

Oregon. L. P. Rockwood (May 16): The aphid epidemic, which was at its peak in vetch and Austrian pea fields late in March, has been reduced below the average abundance for this season of the year. This reduction was initiated by an epidemic of the entomogenous fungus Empusa aphidis, which killed more than 90 percent of the aphids. The fungous disease reached its peak in early fall-sown vetch and pea fields about April 10, and in latefall-sown and spring-sown fields late in April. The few aphids surviving the disease were further reduced by predators, particularly the syrphids (Syrphus torvus O. S., S. opinator O. S.) and Lasiophthicus pyrastris L. Vetch and Austrian peas showed some recovery.

A HARVESTER ANT (Pogonomyrmex occidentalis Cress.)

Nebraska. M. H. Swenk (May 15): The mound-building prairie ant was reported damaging alfalfa in Dundy County the third week in April.

FRUIT INSECTS

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. N. Y. State Col. Agr. News Letter (May): The winter mortality of larvae was high in many areas in the western New York fruit belt, but low in the lake zone and in the Youngstown area in Niagara County. Even in areas where the mortality was highest, there was a considerable survival of larvae below the snow line. The first catch of moths in light traps in the Rome orchard at Geneva was 4 days earlier and nine times heavier than the first catch in 1933. First adults observed in Hudson River Valley on May 17; larvae and pupae in Ulster County, May 10.

Delaware. L. S. Stearns (May 22): Eighty percent of the overwintered larvae had pupated by May 19; first emergence of spring brood, May 7.

Pennsylvania. H. E. Hodgkiss (May 23): The following numbers of adults were caught in bait pails in Franklin County on the dates indicated: May 14, 14; May 15-18, none; May 19, 62; May 20, 372; May 21, 343.

H. N. Worthley (May 28): The first moths emerged on the night of May 10, when the earliest varieties of apples were just ready for the petal-fall spray. Abnormally high evening temperatures produced heavy flight of moths on the evenings of May 19, 20, and 21, bait pails averaging over 70 moths on the evening of May 20.

Virginia. W. J. Schoene (May 23): Adults are very numerous in the Roanoke district, where large numbers emerged between May 8 and 15. Many worms were entering the apples on May 17, 18, and 19.

Georgia. C. H. Alden (May 21): The codling moth is scarce at Cornelia. There has been very little egg laying by spring-brood moths.

Ohio. T. H. Parks (May 24): Emergence of adults began in Lawrence County on May 5 and at Columbus on May 13, Wooster May 17, and Oak Harbor on May 20. Although not more than the normal number overwintered, the spring has been very favorable for egg laying.

Illinois. W. P. Flint (May 22): Conditions this spring have been highly favorable to the codling moth, and first-brood adults have emerged in unusually large numbers and are more closely bunched than usual. The peak of emergence occurred in southern Illinois about May 12.

Missouri. L. Haseman (May 23): The peak of emergence of first-brood codling moths is past in southern Missouri. In the central and northern parts of the State emergence reached its peak this week. Worms began entering the apples about May 17.

Nebraska. M. H. Swenk (May 21): The codling moth is moderately abundant in the southeastern part of the State.

Kansas. H. R. Bryson (May 24): Very abundant in Doniphan County, in north-eastern Kansas, where the first moth was taken on May 7. First moths were taken on May 3 in the vicinity of Oxford, in the Arkansas River Valley.

Colorado. Geo. M. List (May 26): The codling moth mortality was very low during the winter. The season is bringing the moths out earlier than we have ever recorded. At Grand Junction, Mesa County, the first moths were taken in traps on April 15. By April 25 the catches indicated that the peak of emergence of the spring-brood moths was approaching. J. H. Newton reported that the first moths were taken in traps at Paonia, Delta County, on April 21 and that a large number was taken during the last days of the month. In the Fort Collins district the first moths were taken in traps on May 15 and large numbers were taken on May 20 and 21.

Idaho. R. W. Haegeler (May 21): The codling moth is very abundant. Worms have been entering fruit since about May 1 in the southwestern part of Idaho.

Utah. C. J. Sorenson (May 26): The codling moth is very abundant in Cache, Davis, and Utah Counties.

Washington. E. J. Newcomer (May 18): Temperatures have been more normal in Washington during May than in April, and only slight injury has occurred to the host fruits, apples and pears. What may prove to be the maximum emergence took place from May 10 to 14.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Northeastern U.S. J. V. Schaffner, Jr., (May 19 - 25): On May 12 C. W. Collins noted very heavy infestations in the northern part of Delaware and the eastern part of Pennsylvania. The first hatching noted was on April 17 at Woodstock, Conn., and also at Melrose, Mass. On April 21 J. E. R. Holbrook examined 51 egg clusters in the field at Melrose and found 50 of them hatching and 27 densely covered with larvae. Infestation is generally heavy throughout Massachusetts, the northeastern part of Connecticut, and the southern parts of Vermont, New Hampshire, and Maine. Through the northeastern part of Vermont and the northern part of New Hampshire the tents are very scarce, and one can travel many miles without seeing any. At Lyme, N.H., some wild cherry trees were examined and several egg clusters were found which had failed to hatch.

Maine. H. B. Pearson (May 20): The eastern tent caterpillar overwintered well. Hatching started April 30 at Augusta and was apparently normal. Larvae are very abundant and from Waterville south are more abundant than in 1933.

Vermont. H. L. Bailey (May 26): Although very abundant in the southern part of the State, outside the mountain area, the tent caterpillar is

scarce elsewhere, indicating that in the colder sections eggs were killed.

Massachusetts. A. I. Bourne (May 25): Much more abundant this year than in 1933, particularly in the eastern part of the State.

Connecticut. W. E. Britton (May 23): Nests are very abundant on apple and wild cherry throughout the State and particularly in Litchfield County. They are perhaps least abundant near the coast.

Rhode Island. A. E. Stene (May 28): Tent caterpillars are very abundant.

New York. R. E. Horsey (May 26): The eastern tent caterpillar is fairly common at Rochester.

H. C. Hallock (May 6): Observed in unprecented abundance in orchards and on wild cherry in the central part of Dutchess County.

N.Y. State Col. Agr. News Letter (May 21): The tent caterpillar is more abundant than usual in the Hudson River Valley; the infestation in Suffolk County is the worse in recent years; caterpillars were full grown and dispersing in Orange County; and are more numerous in Wayne County than they have been for 2 years.

New Jersey. C. H. Hadley (May 15): Unusually abundant in the vicinity of Moorestown and at other points in southern New Jersey. Many webs are seen, not only on wild cherry but on various other trees, such as apple, peach, plum, and shade trees, and also on wild growth in vacant fields.

Pennsylvania. L. B. Parker (May 27): The eastern tent caterpillar is sufficiently abundant for early and total defoliation of large wild cherry trees in the vicinity of Philadelphia.

H. E. Hodgkiss (May 23): Very heavy statewide infestation.

H. N. Worthley (May 28): Caterpillars are now full grown in central Pennsylvania and are seeking cocooning quarters.

Delaware. L. A. Stearns (May 22): Brood near maturity; injury has been observed.

Maryland. E. N. Cory (May 25): The eastern tent caterpillar is very abundant.

Virginia. W. J. Schoene (May 23): The eastern tent caterpillar is generally present but not so numerous as last year.

Tennessee. G. M. Bentley (May): Considerable damage to wild cherry and apple throughout the eastern part of the State.

FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

Colorado. G. M. List (May 26): More serious than for a number of years.

Seriously injuring fruit trees in the Denver and Littleton sections, and being reported from practically all fruit-growing sections, with the exception of Mesa County.

APHIDS (Aphididae)

Massachusetts. A. I. Bourne (May 25): Aphids are less abundant than normal and no serious outbreaks have been observed.

Connecticut. P. Garman (May 22): The rosy apple aphid (Anuraphis roseus Baker) is scarce or absent; have seen no orchard where the species is abundant. The apple aphid (Aphis pomi DeG.) shows a slight increase over last month; enemies are abundant.

New York. P. J. Parrot (May 22): Grain aphids (Rhopalosiphum prunifoliae Fitch) are moderately abundant. The rosy apple aphid is scarce.

Pennsylvania. H. N. Worthley (May 28): Most of the apple aphids have now left the apple trees. Only occasionally can a "rosette" of rosy aphids be found.

Maryland. E. N. Cory (May 25): The rosy apple aphid is scarce.

Virginia. W. J. Schoene (May 23): The fruit aphids, R. prunifoliae, A. pomi, and A. roseus, are present in apple orchards in very small numbers. In some orchards colonies of the rosy have been developed to large size, perhaps owing to the warm dry weather, but no injury is expected.

Georgia. C. H. Alden (May 21): The rosy apple aphid and the green apple aphid are moderately abundant at Cornelia.

Michigan. R. Hutson (May 22): Fruit aphids are scarce.

Alabama. J. M. Robinson (May 22): The apple aphid was scarce to moderately abundant on apple trees at Auburn and Birmingham on May 4.

Kansas. H. R. Bryson (May 24): The apple grain aphid is very abundant in the vicinity of Oxford, in the Arkansas River Valley.

Idaho. C. Wakeland (May 21): A. pomi is very abundant all over the State.

TARNISHED PLANT BUG (Lygus pratensis L.)

Washington. E. J. Newcomer (May 18): Damage to fruit in the Yakima Valley has been especially severe. In many orchards the crops of apples, pears, and peaches have been materially reduced, as the fruit buds were so severely injured that they dropped off.

PEACH

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (May 22): Eggs were observed in peach orchards in New Haven County.

Delaware. L. A. Stearns (May 22): Ninety-six percent of the overwintered larvae had pupated by May 19; first emergence of spring brood, April 26; peak of emergence, May 7.

Virginia. W. J. Schoene (May 23): Very numerous around Roanoke from April 25 to May 8.

Ohio. T. H. Parks (May 22): The full-grown larvae are leaving the terminals at Columbus.

Illinois. W. P. Flint (May 22): More abundant than in 1933. First-brood larvae are practically full grown.

Kentucky. W. A. Price (May 24): Inquiries received from Bowling Green and Louisville.

Georgia. C. H. Alden (May 21): Scarce at Cornelia; cold weather prevented egg laying by spring-brood moths.

Wm. P. Yetter (May 12): Unfavorable weather conditions in March, April, and May caused an almost complete cessation of spring-brood activity and, unless this pest becomes more firmly established later in the season, injury to the peach crop will be light.

Mississippi. C. Lyle (May 23): Severe injury to peach twigs has recently been reported from Attala, Humphreys, and Sunflower Counties.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts. A. I. Bourne (May 25): The first beetles were observed on apple trees at Amherst on May 18 or 19. Since that time they have been moderately abundant.

New York. N.Y. State Col. Agr. News Letter (May 21): Emergence delayed in Hudson River Valley by cold weather but higher temperatures brought out considerable numbers on May 17 to 19. A few punctures found in Orange County; not much activity in Dutchess County; emerging slowly in Ulster County; first cutting and feeding punctures May 17; first curculio shaken from tree in Essex County on May 14.

Delaware. L. A. Stearns (May 22): Continuous emergence from hibernation from April 20 to date; peak of emergence on May 6, 7, and 8.

Michigan. R. Hutson (May 22): The plum curculio is moderately abundant.

Illinois. W. P. Flint (May 22): Reported as scarce in southern Illinois.

Georgia. O. I. Snapp (May 21): Full-grown larvae began to leave peach drops at Fort Valley on May 7, 8 days later than in 1933. The peak of first-brood emergence of larvae occurred on May 12. No pupation has taken place. The cool, rainy weather is delaying pupation, and this may cause the second brood to be light or may prevent it entirely. The general infestation increased during the month and is heavier than average. Peach drops are very wormy in many orchards, and the alarm of growers over the increased infestation is resulting in more diligent enforcement of control measures.

C. H. Alden (May 21): The plum curculio is moderately abundant at Cornelia; about 5 percent of the drops being infested with larvae.

Missouri. L. Haseman (May 23): Plum curculio ovipositing at Columbia since May 1; some larvae at pit of green fruit; not much new injury since May 20.

Alabama. J. M. Robinson (May 22): Moderately abundant on wild plum and unsprayed fruits at Auburn.

GREEN PEACH APHID (Myzus persicae Sulz.)

Ohio. E. W. Mendenhall (May 23): Heavy infestation on Spiraea vanhouttei.

Kansas. H. R. Bryson (May 24): Heavy infestation reported in the Arkansas River Valley.

PLUM

APHIDS (Aphidae)

Utah. G. F. Knowlton (May 22): Two species of aphids are heavily attacking plums at Roy; one species tightly curling 85 percent of the leaves on some young trees.

Idaho. R. W. Haegele (May 21): Hyalopterus arundinis Fab. is common in many prune orchards in southwestern Idaho and is rapidly increasing to damaging numbers.

C. Wakeland (May 21): The thistle aphid (Anuraphis cardui L.) is very abundant on prunes in southwestern Idaho.

WHITE APPLE LEAFHOPPER (Typhlocyba pomaria McAtee)

Idaho. R. W. Haegele (May 21): Present in injurious numbers in a few prune orchards in southwestern Idaho.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California. F. H. Wymore (May 17): Activated by a rather sudden rise in temperature to 102° F., the first-brood beetles seriously attacked the

Derby Royal and Stewart apricots and damaged as high as 50 percent of the fruit in some orchards.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. P. J. Parrot (May 22): Grape leafhoppers are abundant in grape districts in the western part of the State.

California. S. Lockwood (May 1): The grape leafhopper is far more than normally abundant in the Napa Valley, and in the San Joaquin Valley continues to be more of a pest than it has been for years, even in 1930, the worst outbreak ever previously recorded.

M. L. Jones (May 11): Madera County reports that the grape leafhopper was severe generally on grapes in April. In Kings County the leafhopper severely infested 13,956 acres of grapes in April. In Kern County the leafhopper was reported as moderately abundant during April.

WESTERN GRAPE ROOT WORM (Adoxus obscurus L.)

California. S. Lockwood (May 1): On April 28 the grape root worm was observed in damaging numbers on grape near Saint Helena.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

Kansas. H. R. Bryson (May 24): Larvae of the 8-spotted forester were reported attacking the leaves of grapes at Sedan. This insect was doing slight damage at Manhattan to unsprayed grapes during the first 2 weeks of May.

CURRANT

CURRANT APHID (Myzus ribis L.)

Ohio. E. W. Mendenhall (May 23): The currant aphid is very abundant and is curling the terminal leaves of currants in home gardens.

IMPORTED CURRANT WORM (Pteronidea ribesii Scop.)

Kansas. H. R. Bryson (May 24): The imported currant sawfly is moderately abundant on gooseberries and currants at Manhattan.

CITRUS

GREEN CITRUS APHID (Aphis spiraecola Patch)

Florida. J. R. Watson (May 21): The green citrus aphids were very scarce the past year in the main citrus belt but have been more numerous than ever on Satsuma trees in Alachua County during the last month.

BLACK CITRUS APHID (Toxoptera aurantiae Boyer)

California. M. L. Jones (May 11): The black citrus aphid is reported as generally severe on oranges.

AVOCADO

LATANIA SCALE (Aspidiotus lataniae Sign.)

California. H. J. Ryan (May 24): The Latania scale has increased considerably in avocado plantings in Los Angeles County, the districts nearer the coast being most severely infested.

TRUCK CROP INSECTS

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Virginia. L. W. Brannon (April 23): On April 23 beetles were observed feeding on snap beans in the vicinity of Norfolk for the first time during the season.

Alabama. J. M. Robinson (May 22): Very abundant on garden vegetables and flower gardens in Auburn.

Kansas. H. R. Bryson (May 24): First adults were taken at Manhattan on May 15

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Virginia. L. W. Brannon (May 10): Adults have been observed causing some injury to young snap beans growing near squash or cucumbers at Norfolk.

Oklahoma. C. F. Stiles (May 17): Appearing in large numbers in the southern part of the State.

FLEA BEETLES (Halticinae)

New Jersey. R. C. Burdette (May 25): Numerous on tomato and eggplant in the coldframes and in the field.

Virginia. L. W. Brannon (April 25): Adults of Systema taeniata Say were observed feeding on young snap beans in the Norfolk area on April 25.

Mississippi. C. Lyle (May 23): Flea beetles, identified by J. M. Langston as S. taeniata, were reported very abundant in spots in cotton fields near Fulton and Dorsey, Itawamba County, on May 15, and reported by a County Agent at Houston, in Chickasaw County, on May 18, as abundant on soybeans and other plants.

Nebraska. M. H. Swenk (May 15): The western cabbage flea beetle (Phyllotreta pusilla Horn) was injuring cabbage and radishes in Hooker County during the third week in April.

FALSE CHINCH BUG (Nysius ericae Schill.)

Texas. F. L. Thomas (May 23): A number of complaints have been received from Milam, Robertson, Burleson, and Bell Counties. In all cases were attacking cotton near turn rows or in fields where weeds had occurred.

SOWBUGS (Oniscidae)

South Carolina. W. C. Nettles (May 24): Sowbugs were observed injuring roots of ornamentals at Sumter.

Alabama. J. M. Robinson (May 22): Sowbugs are very abundant in gardens at Birmingham.

Mississippi. C. Lyle (May 23): A correspondent at Shuqualak, Noxubee County, recently reported that pillbugs were abundant in his sweetpotato bed.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Lepitinotarsa decemlineata Say)

South Carolina. F. Sherman (May 24): Severe damage has been caused to tomatoes at Walhalla. Damage heavier than usual in the western part of the State.

Florida. J. R. Watson (May 21): Moderately abundant in the Hastings potato district.

G. B. Merrill (May 23): Moderately abundant at La Crosse, Santa Fe, and Hague, in Alachua County. Potatoes are generally mature and are being dug before the beetles can become very abundant on the vines.

Missouri. L. Haseman (May 23): Colorado potato beetles have been ovipositing since May 10 and some eggs have hatched at Columbia. Infestation not so heavy as usual.

Nebraska. M. H. Swenk (May 21): Beetle very abundant over the State.

Kansas. H. R. Bryson (May 24): First observed on plants at Manhattan on May 8 and 9.

Oklahoma. C. F. Stiles (May 17): The first brood is seriously injuring potatoes.

Idaho. R. W. Haegele (May 21): Early potatoes are being dusted in Canyon County, in the southwestern part of the State.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Connecticut. N. Turner (May 22): The potato flea beetle is about as abundant as usual; many adults observed on potatoes and weeds.

GRAY BLISTER BEETLE (Epicauta cinerea Forst.)

Florida. J. R. Watson (May 21): Blister beetles, particularly E. cinerea, has been troublesome on tomatoes and potatoes in some sections.

LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

South Carolina. F. Sherman (May 24): More abundant than usual on Irish potatoes at Clemson College. The wilting of plant tops is appreciable.

Mississippi. C. Lyle (May 23): Specimens collected from Irish potato plants were received from Meadville, Franklin County, on May 7. No injury was reported.

Texas. F. L. Thomas (May 23): L. phyllopus was reported as attacking artichoke and roses in local gardens at College Station.

TOMATO PSYLLID (Paratrioza cockerelli Sulc.)

South Dakota. H. C. Severn (May 9): This tomato pest was found in South Dakota greenhouses for the first time.

Colorado. G. M. List (May 26): The tomato psyllid appeared in considerable numbers in Mesa County the latter part of April. The indications are that the infestation will be serious enough to cause considerable loss to the early potatoes. On May 22 eggs, all freshly laid, were found to be quite numerous on tomatoes near Fort Collins. This is earlier than we usually find them. None have hatched yet.

Utah. G. F. Knowlton (May 22): Adults of the first generation are maturing on teavine and matrimony vine at Magna and at Salt Lake City.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New Jersey. R. C. Burdette (May 25): The Mexican bean beetle seems to have been hard hit by the cold winter.

Maryland. E. N. Cory (May 25): Adults first recorded in Prince Georges County on May 19.

Virginia. L. W. Brannon (April 26): The first Mexican bean beetle of the season was found on April 26 feeding on snap beans that were just coming up in the Norfolk trucking section. This is the earliest record of emergence in this area since 1929. The first eggs were deposited in the insectary on May 11 by a beetle taken in the field on May 7. These eggs hatched in the insectary on May 20, the first hatching being 9 days later than in 1933.

Georgia. T. L. Bissell (May 9): The first beetle of the season was observed on beans on May 9, at Experiment, but it had done no feeding. No serious injury had been observed by May 26.

South Carolina. F. Sherman (May 24): Great numbers of the Mexican bean beetle are now invading fields near Clemson College.

Florida. J. R. Watson (May 21): There have been no reports of the Mexican bean beetle for 2 years.

Alabama. J. M. Robinson (May 22): Adults are very abundant on beans at Auburn.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia. L. W. Brannon (May 5): At Norfolk the first beetles of the season were observed feeding on snap beans on May 5.

South Carolina. F. Sherman (May 24): More abundant and destructive, over the State than usual.

Georgia. T. L. Bissell (May 3): Beetles have done much damage by feeding on the leaves of beans at Experiment.

Tennessee. G. M. Bentley (May): Heavy damage to early beans was reported in Knox County; and to shipping beans at Greenfield on May 21.

CABBAGE

IMPORTED CABBAGE BUTTERFLY (Ascia rapae L.)

Maryland. E. N. Cory (May 25): The imported cabbage butterfly is reported numerous in Cecil County.

South Dakota. H. C. Severin (May 8): The first adult was seen on April 15.

Missouri. L. Haseman (May 23): Early cabbage is being severely attacked at Columbia.

Tennessee. G. M. Bentley (May): Generally abundant over the State.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

South Carolina. W. C. Nettles (May 24): Severe damage to cabbage in trucking districts from Charleston to Beaufort is reported; adults are abundant; and damage is now in excess of that by other larvae.

CABBAGE APHID (Brevicoryne brassicae L.)

New Jersey. R. C. Burdette (May 25): Abundant in certain sections of the State.

Kansas. H. R. Bryson (May 24): Very abundant on radishes about May 1. On May 14 no aphids were to be found, owing to the activity of ladybird beetles.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia. L. W. Brannon (May 2): More abundant than last year. Adults have been observed feeding in fields of crucifers in the Norfolk area since about the middle of April. The first eggs of the season were observed in the field on April 24. Emergence and oviposition about normal. The eggs deposited on April 24 hatched on May 7.

South Carolina. C. W. Nettles (May 24): Apparently less numerous than usual.

Kentucky. W. A. Price (May 24): Specimens have been received during the past 3 weeks from Debord, Pineville, and Middlesboro.

CABBAGE MAGGOT (Hylemia brassicae Bouche)

Pennsylvania. H. N. Worthley (May 28): Eggs were found the first week in May and are more common than in recent years.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

New Jersey. R. C. Burdette (May 25): Infestation by the asparagus beetle is unusually heavy this year.

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata L.)

Iowa. H. E. Jaques (May 24): The 12-spotted asparagus beetle has made its first appearance in Henry County this spring.

A WEEVIL (Eurymycter fasciatus Oliv.)

Utah. G. F. Knowlton (April 26): Weevil collected at Riverheights, Logan, on April 21 by T. O. Thatcher, reported as having been found inside asparagus stem.

CELERY

FLOWER THRIPS (Frankliniella tritici Fitch)

California. S. F. Bailey (May 4): Sixty acres of celery near Santa Ana reported to be seriously damaged by the thrips feeding about the crown at the base of the stalks. The plants are about one third grown.

CARROTS

CARROT WEEVIL (Listronotus latiusculus Boh.)

Michigan. R. Hutson (May 21): During the last few days we have had considerable trouble in one district in Kalamazoo County. Although this insect has been recorded from Michigan, this is the first recent outbreak.

SPINACH

SPINACH FLEA BEETLE (Disonycha xanthomelaena Dalm.)

Nebraska. M. H. Swenk (May 15): During the week of April 16 specimens were sent in by a Lancaster County correspondent. He reported this insect as having destroyed a patch of spinach.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Vermont. H. L. Bailey (May 26): Very numerous and destructive in strawberry beds at Hyde Park and other places in Lamoille County.

Kansas. H. R. Bryson (May 24): Reported for the first time this year from Doniphan County, where it is causing considerable injury. Complete destruction of the crop on 4 acres and partial destruction on 2 more acres have been reported from Wathena.

STRAWBERRY ROOT WEEVILS (Brachyrhinus spp.)

Utah. G. F. Knowlton (May 7): The strawberry root weevil (B. ovatus Fab.) and the rough strawberry weevil (B. rugosostriatus Goeze) are damaging strawberry plants at Pleasant Grove, Millville, and Logan.

FULLER'S ROSE BEETLE (Asynonychus godmani Crotch)

California. E. O. Essig (April 30): Larvae are burrowing into the crown and completely ruining a few strawberry plants at Hayward. This work is similar to that of the strawberry root weevil, which does not occur here.

IMBRICATED SNOUT BEETLE (Epicaerus imbricatus Say)

Kansas. H. R. Bryson (May 24): This insect is reported as having caused rather severe damage to foliage on one patch of young strawberries at Wathena.

A FLEA BEETLE (Haltica litigata Fall.)

Mississippi. C. Lyle (May 23): A correspondent in Leflore County sent on May 12 specimens of Haltica sp., probably litigata, with the following statement: "Godetias were doing well and were about 8 inches high when these beetles suddenly arrived and destroyed practically all of the small plants. They now seem to leave for a short time but return in hundreds." A grower in Lee County sent specimens on May 18 of the species, reporting that millions of them were present in a small area in his soybean field.

Texas. E. V. Walter (April 13): Flea beetles found to be rather seriously injuring a small area in a strawberry field at Poteet recently. These flea beetles are very abundant on weeds, particularly the evening primrose, and are entering the strawberry fields and gardens from these weed patches.

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Kansas. H. R. Bryson (May 24): Very abundant and causing rather steady progressive damage over a considerable area in the vicinity of Wathena; also reported from Hutchinson and Eudora.

Utah. G. F. Knowlton (May 7): Leafrollers are now rolling leaves on strawberry plants at Logan, Millville, and College Ward.

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Kansas. H. R. Bryson (May 24): The strawberry crown borer is reported as having destroyed 18,000 young plants on one farm at Wathena.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Kansas. H. R. Bryson (May 24): Rather heavy infestations found in spotted areas.

THRIPS (Thysanoptera)

Minnesota. A. G. Ruggles (May 28): A species of thrips (unknown) is doing severe

damage to strawberry at Red Wing, Goodhue County. It works in the blossoms, causing gnarly berries to be formed.

CYCLAMEN MITE (Tarsonemus pallidus Bks.)

New York. P. J. Chapman, N. Y. State Col. Agr. News Letter (May 21): Considerable damage to strawberry plantings in the northern part of Dutchess and the southern part of Columbia Counties.

BEETS

BEET LEAFHOPPER (Eutettix tenellus Sak.)

Utah. G. F. Knowlton (May 22): Becoming dangerously abundant in most northern sugar beet fields. This, together with shortage of irrigation water, indicates probability of severe curly-top damage in many localities.

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

Utah. G. F. Knowlton (May 22): Damaging beets at Ogden, Taylor, Hot Springs, Syracuse, and West Point.

TOBACCO

TOBACCO BUDWORM (Heliothis virescens Fab.)

Florida. F. S. Chamberlin (May 5): Tobacco budworms are very abundant this season in tobacco in Gadsden County.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Florida. F. S. Chamberlin (May 24): Quite abundant and causing moderate damage to tobacco in Gadsden County.

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

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut. W. E. Britton (May 23): Grubs from a number of premises in New Haven and West Haven have been brought to the Experiment station this spring. Evidently they survived the subzero temperatures of last winter.

New York. C. H. Hadley (April): The survey diggings at Jericho show an average of 14 larvae per square foot, which is about the same as in the spring of 1933. The range in abundance this spring has been from none to 77 grubs per square foot. At Jericho there has been some spread in the known area of heavy infestation, as another lawn showing about 1 acre of ruined turf was brought to our attention this spring. This lawn is located northwest of Jericho and nearly a mile from the older infestations. In Westchester County the abundance in the older infested area in the southern part of the county, extending from New Rochelle and Mount Vernon on the south to White Plains on the north, shows very little change from last year. This season additional

infestations in the vicinity of Ossining, where there is considerable lawn destruction, were brought to our attention.

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

Connecticut. R. B. Friend (May 23): Larvae were collected in two localities in New Haven.

New York. C. H. Hadley (April): The survey diggings at Jericho show an average of 29 Asiatic garden beetle larvae per square foot, with a range of 1 to 60. This indicates that they are a little more numerous than in the spring of 1933. The beetle is apparently more numerous now at Locust Valley than at Jericho. During April new infestations were discovered at Syosset in the extreme eastern part of Nassau County and on the grounds of the New York State School of Applied Agriculture, east of Farmingdale, in Suffolk County. The Westchester and Bronx County infestations are about the same as last season, except that the infestation has become considerably heavier in the vicinity of Yonkers. Lawns in the northern part of Yonkers are showing sufficient injury to necessitate rebuilding.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey. C. H. Hadley (April): Winter mortality this year was no greater than that of other years, despite the unusually low temperature of February. A rather general reduction of the population, as compared with that represented at this time last year, is indicated in the older established infestations. In the newer infestations an increase is indicated. As a result, the population of the coming summer may be expected to be, in general, about equal to that of last summer, with more or less striking regional or local differences.

ROOT WEEVILS (Brachyrhinus spp.)

Vermont. H. L. Bailey (May 26): B. sulcatus Fab. was found to be very abundant in soil about evening primrose and other plants at Montpelier on May 2.

Connecticut. W. E. Britton (May 23): Heavy damage by B. ovatus L. occurred in a nursery at Rockyhill; 75,000 young hemlocks and several hundred thousand blue spruce were destroyed. The soil was heavily infested with the small white grubs which chew the bark off the roots of the seedlings.

GYPSY MOTH (Porthetria dispar L.)

Maine. H. B. Peirson (May 20): Hatching started on May 7 in York County.

Rhode Island. A. E. Stene (May 28*): The gypsy moth is hatching well in the northern part of the State. It is scarcer in some places in the southern part of the State, where it was abundant last year.

BROWN-TAIL MOTH (Nyctelia phaeorrhoea Don.)

Maine. H. B. Peirson (May 20): The winter mortality was very high, resulting in almost complete killing of the species.

CANKER WORMS (Geometridae)

Massachusetts. J. V. Schaffner, Jr. (May 19): A severe infestation of Paleacrita vernata Peck was observed on elms at Pine Banks Park by C. W. Collins and C. E. Hood. On May 8 first-instar larvae were very abundant on the foliage just opening.

Connecticut. W. E. Britton (May 23): Alsophila pometaria Harr. is prevalent locally on deciduous woodland and fruit trees, particularly in Fairfield and New Haven Counties.

New York. E. P. Felt (May 22): A. pometaria is now partly grown and very prevalent in southeastern New York, with every indication that defoliation will be widespread. The outbreak may be more severe than last year.

Rhode Island. A. E. Stene (May 28): Canker worms are abundant in a few places.

Kansas. H. R. Dryson (May 24): Canker worms have done considerable injury to hackberry, elm, and unsprayed apple trees at Lawrence. There was considerable injury to elms, hackberry, and honey locust at Manhattan, despite the fact that the trees were banded, as it was impossible to maintain sticky bands during the entire period of emergence. Canker worms have also been reported causing injury at Chanute, Scandia, and Oxford. At the latter place they were reported to be very abundant on apple and maples.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Colorado. G. M. List (May 26): The forest tent caterpillar is occurring in epidemic form in a number of localities, the heaviest infestation probably being in the northern part of the State, where many unsprayed poplar and ash trees are being seriously defoliated. Some injury is occurring at Grand Junction.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio. E. W. Mendenhall (May 16): Bagworms are very plentiful on several species of shade trees, including arborvitae. Indications are that they will be plentiful in the southern and southwestern parts of the State. Not many are being destroyed by natural enemies.

PERIODICAL CICADA (Magicicada septendecim L.)

Maryland. W. R. Walton (May 29): A nymph was collected on May 21, on my lawn at 15 Maple Avenue, Hyattsville, and an adult emerged on May 22. A shell was found at the same place on May 29.

J. A. Hyslop (May 22): An adult, the only one I have seen this year, was collected near my home at Avenel (Silver Spring). A large colony of Brood X is in the ground at this place and this may be an accelerated individual of that Brood.

ASH

A SAWFLY (Tomostethus multinctus Roh.)

Maryland. G. S. Langford (May 25): An ash sawfly, probably T. multinctus Roh., was very abundant throughout the central part of Prince Georges County this spring. By May 17 many white ash trees were completely defoliated. Observations on the development of the insect showed that practically all overwintering individuals pupated between April 1 and April 20. Adults were abundant between April 22 and May 5. Hatching began on May 6. About 4 percent of the overwintering larvae were being parasitized by an ichneumonid wasp.

BEECH

BEECH SCALE (Cryptococcus fagi Baer.)

Maine, New Hampshire, Massachusetts. J. V. Schaffner, Jr. (May 19): R. C. Brown reports that in eastern Massachusetts and southern New Hampshire practically no mortality can be attributed to the severe winter. A superficial examination in the vicinity of Liberty, Me., indicates practically complete mortality above the snow line in certain sections, while in other nearby areas the insect does not seem to have been much affected by the severe winter.

BOXELDER

BOXELDER LEAF ROLLER (Gracilaria negundella Chamb.)

Colorado. G. M. List (May 26): The boxelder leaf roller is quite abundant in the Weld County district. Many boxelder trees are largely defoliated and elms are being considerably injured.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Massachusetts. J. V. Schaffner, Jr. (May 25): Adults were actively issuing from their hibernation quarters the first week of May, particularly during the hot days of the latter part of the week. The first egg masses were noted on May 16 at Woburn. Between May 17 and 24 the beetles were emerging in abundance in the eastern part of the State.

Connecticut. W. E. Britton (May 23): This insect is present in large numbers in some houses at Westport and Weston. Adults are now feeding on foliage.

Ohio. T. H. Parks (May 23): This beetle is spreading in western Ohio and was sent in this month with the statement that it is feeding on the foliage of elm trees and is laying eggs. Specimens came from Miami and Champaign Counties. Serious injury occurred to some elms in Columbus last summer.

Idaho. R. W. Haegele (May 21): This insect is very abundant and injurious in southwestern Idaho. First generation larvae are hatching.

California. M. L. Jones (May 11): The elm leaf beetle was reported as causing slight damage to elms in Kern and Madera Counties in April.

C. S. Morley, Kern Co. Agr. Conn. Mo. News Bull. (May 1): This insect is doing considerable damage, and we find first-brood beetles emerging 1 month earlier than usual.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Ohio. E. W. Mendenhall (May 16): Various species of elm in Upper Arlington, adjacent to Columbus and at Columbus, are very badly infested.

Colorado. G. M. List (May 26): There is a prospect for the heaviest infestation ever recorded in many sections of the State. Egg laying has not begun, but the scale is much further advanced at this time than usual.

FIR

AN APHID (Dreyfusia piceae Ratz.)

Maine. H. B. Peirson (May 20): Winter mortality of the balsam wooly aphid amounted to a 90 percent kill of aphids above the snowline and a 50 percent kill of those below.

HEMLOCK

A GELECHIID (Recurvaria thujaella Kearf.)

Massachusetts. J. V. Schaffner, Jr. (May 25): An outbreak of this insect was reported in May 1933 at Beverly. Several acres of hemlock were affected. On May 17, 1934, the infestation was still persisting. From a collection made on that date 31 percent of the larvae were found to be parasitized by Copidosoma sp.

JUNIPER AND CEDAR

JUNIPER WEBWORM (Dichomeris marginellus Fab.)

Maryland. G. S. Langford (May 25): On May 23 this insect was observed pupating at College Park. This date of pupation compares favorably with that of 1931, when larvae pupated from May 14 to June 2. Considerable injury was done to junipers during early spring, especially to Irish and Swedish juniper. Many junipers are heavily infested.

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi. C. Lyle (May 23): Serious injury to Cedrus deodara was reported from Louisville in Winston County on May 4.

JUNIPER SCALE (Diaspis carueli Targ.)

Maryland. G. S. Langford (May 25): The Juniper scale is abundant and injurious on juniper, especially Irish, Swedish, and Pfitzer, in many places. Eggs were observed hatching at College Park on May 24. Approximately 11 percent of the scale showed parasitization.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

New England. J. V. Schaffner, Jr. (May 25): This case bearer seems to be present on all larch trees throughout New England. The infestations, in general, are not quite as severe as last year. However, the trees in many areas, especially in Maine, are almost completely brown from the severe feeding.

Maine. H. B. Peirson (May 20): This insect suffered very little winter mortality. Larvae have moved onto the foliage, which is beginning to show brown from the effects of the feeding.

Vermont. H. L. Bailey (May 26): This insect is very abundant at Sharon, but apparently the feeding was nearly over on May 23. General observation in Essex County on May 24 indicated only slight infestation.

New York. H. E. Horsey (May): Caterpillars in overwintered cases were moving onto new leaves on May 2 and for about a week after that date. On May 23 considerable damage was to be found on American larch, for which they seem to show a preference. A number were observed on Dahurian larch (Larix gmelini japonica) and on Siberian larch (L. sibirica). The least infested are Japanese larch (L. kaempferi) and European larch (L. decidua). The planting under observation contains trees from 20 to 70 feet in height. The damage probably would be greater if the trees had not been sprayed in the early part of the month. Several reports from western New York indicate that this insect is becoming a serious pest on the larch.

OAK

CALIFORNIA OAK WORM (Phryganidia californica Pack.)

California. H. J. Ryan (May 24): The California oak moth has appeared in large numbers this spring and has done considerable damage to live oaks along the foothills between Los Angeles and Santa Monica.

PINE

EUROPEAN PINE SHOOT MOTTH (Rhyacionia buoliana Schiff.)

Connecticut. R. B. Friend (May 23): Infestation on red pine is much lighter throughout the State than at this time last year.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine. H. B. Peirson (May 20): Adults were very abundant on white pine leaders on May 15. Feeding and mating were taking place at Augusta and vicinity.

PINE NEEDLE SCALE (Chionaspis pinifoliae Fitch)

Massachusetts. A. I. Bourne (May 25): Eggs were hatching at Amherst May 19 or 20 and there was no appreciable winter mortality.

Maryland. E. N. Cory (May 25): The pine needle scale was observed on white pine at Baltimore.

Colorado. G. M. List (May 26): The pine leaf scale is very abundant in many localities. Eggs were hatching freely at Fort Collins on May 19 and at Denver on May 12.

SPRUCE

AN APHID (Lachnus abietis Fitch)

Nebraska. M. H. Swenk (May 15): Specimens of spruce twigs, heavily infested with a Lachnus, believed to be L. abietis, came from Washington County the second week in May.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Massachusetts. J. V. Schaffner, Jr. (May 19): C. E. Hood found these beetles abundant and very active on May 7. Many were mating and some eggs had been deposited, chiefly on the underside of willow leaves.

NEVADA BUCK MOTH (Hemileuca nevadensis Stretch)

Nebraska. M. H. Swenk (May 15): Newly hatched larvae of the Nevada buck moth were sent in from Sheridan County on May 10, reported as having been found on a bay-leaved, or laurel willow tree.

I N S E C T S A F F E C T I N G G R E E N H O U S E

A N D O R N A M E N T A L P L A N T S

A WEEVIL (Pseudocneorrhinus setosus Roelofs)

Connecticut. W. E. Britton (May 22): All old leaves on mountain laurel had been notched around the margins by the beetles; they were feeding on the small bracts around the terminal buds of rhododendron. Some of the leaves of Deutzia gracilis had been eaten; last season the bush was stripped.

A LYGAEID (Geocoris bullatus Say)

Nebraska. M. H. Swenk (April 15 to May 15): Specimens taken in abundance from a lawn in Lancaster County, where they were causing bare spots, were brought in on May 8.

AMARYLLIS

A NOCTUID (Xanthopastis timais Cram.)

Mississippi. C. Lyle (May 23): Larvae were abundant on amaryllis at Valley, Yazoo County, on April 27.

BOXWOOD

BOXWOOD LEAF MINER (Monarthropalpus buxi Labou)

Maryland. G. S. Langford (May 25). Present in large numbers on many plantings of boxwood on the Western Shore. Emergence began at College Park on May 9.

GLADIOLI

GLADIOLUS THRIPS (Taeniothrips gladioli M. & S.)

Florida. J. R. Watson (May 21): Specimens taken on gladiolus and iris have been sent in from many new localities, and thrips are quite generally distributed over Florida.

HOLLY

HOLLY LEAF MINER (Phytomyza ilicis Curt.)

Maryland. G. S. Langford (May 25): The holly leaf miner is rather abundant in individual plantings. Serious damage is being done to individual trees. The insect was in the pupal stage on May 22.

MAGNOLIA

MAGNOLIA SCALE (Neolecanium cornuparvum Thro.)

South Carolina. J. A. Berley (May 24): Abundant on magnolia at Charleston; being attached by predacious lepidopterous larvae.

ROSE

OBLIQUE-BANDED LEAF ROLLER (Cacoecia rosaceana Harr.)

New York. R. E. Horsey (May): Considerable evidence of the work of this insect on the meadow rose (Rosa blanda), but no serious damage. The caterpillars are hard to find. They have probably been eaten by birds.

SPINY ROSE GALL (Rhodites bicolor Harr.)

Nebraska. M. E. Swenk (May 15): Specimens of galls deforming roses were sent in from Thayer County the second week in May.

VIRGINIA CREEPER

• A LEAFHOPPER (Erythroneura comes ziczac Walsh)

Idaho. R. W. Haegele (May 21): The Virginia creeper leafhopper survived the winter in large numbers and first-generation nymphs are now hatching.

Utah. G. F. Knowlton (May 8): Grape leafhoppers are causing leaves of the Virginia creeper to become spotted at Logan and Brigham. (May 22): Grape leafhoppers are damaging Virginia creeper at Roy, Ogden, Salt Lake City, and Grantsville.

I N S E C T S A T T A C K I N G M A N A N D
D O M E S T I C A N I M A L S .

WINTER TICK (Dermacentor albipictus Pack.)

North Dakota. J. A. Munro (May 19): The ticks reported in the Insect Pest Survey Bulletin vol. 14, no. 2, p. 62 (April 1934) have been determined by F. C. Bishopp and H. E. Ewing as D. albipictus. This species is more widespread in western North Dakota than was at first believed. It was found on cattle and horses May 13 in Billings County.

GOATS

SCREW WORM (Cochliomyia macellaria Fab.)

Texas. O. G. Babcock and E. C. Cushing (May 8): No doubt the heavy loss of goats due to cold weather this spring is the direct cause of the superabundance of flies. A ranchman living 35 miles north of San Angelo, Tom Green County, reports 2,000 cases.

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

TERMITES (Reticulitermes spp.)

Connecticut. N. Turner (May 22): Continued reports of damage by R. flavipes Koll. come in from Hamden, New Haven, Stamford, and Madison. There are many serious cases.

Illinois. W. P. Flint (May 22): Termite damage has been extremely heavy. The actual amount spent for repairing damaged buildings would run very high.

Tennessee. G. M. Bentley (May): General damage over the State by R. flavipes.

Nebraska. M. H. Swenk (April 15 to May 15): Termites (R. tibialis Dks.) were reported from Clay and Hall Counties.

A P T I N I E (Mezium americanum Lap.)

Rhode Island. A. E. Stene (May 28): A beetle not previously sent in to this office was reported from a recently constructed bank building in Providence. The insects are being captured on the inside of electric fixtures in the ceiling.