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**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations  
Plant Pest Control Division  
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United States Department of Agriculture  
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## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

EUROPEAN CORN BORER egg masses and larval feeding injury noted in Connecticut and Maryland and hatching occurred in Illinois, Wisconsin and Nebraska. CORN EARWORM damage light to heavy to sweet corn in some Georgia and Alabama counties. (p. 580). ARMYWORM outbreak noted on oats and rye in Jasper County, Indiana, and treatments to wheat underway in central and eastern Illinois and in Butler County, Nebraska. (pp. 580, 581). BLACK CUTWORM damaging corn in a number of states; apparently most serious in areas of Illinois, Missouri, Indiana, Ohio, Pennsylvania, Virginia and Maryland. Also reported in Wisconsin, North Carolina and Oregon. PALE-SIDED CUTWORM common and damaging in wheat and corn in northeastern Montana, June 1-15. WHEAT CURL MITE medium to heavy in wheat in Shawnee and Douglas Counties, Kansas, and in Newton County, Missouri; and CORN LEAF APHID generally heavy in eastern and north central North Dakota on barley and increasing rapidly on barley in three Nevada counties. (p. 582). One of heaviest and widespread BARLEY THRIPS infestations in past 5 years observed in North Dakota. (p. 583).

SPOTTED ALFALFA APHID increasing in Arizona. (p. 584). ALFALFA WEEVIL heavier than normal in 3 Oregon counties and caused heavy damage in untreated alfalfa in Choteau County, Montana. Damage also severe in a number of Utah counties and larval counts relatively high in areas of Colorado. (p. 586).

PECAN NUT CASEBEARER infestations light to heavy on pecans in Louisiana and heavy in Marshall and Stephens Counties, Oklahoma. (p. 590).

POTATO FLEA BEETLE heavy in areas of Maine, Connecticut and New York (p. 591); and MEXICAN BEAN BEETLE damaging in Maryland and Alabama and building up in New York (p. 592). STRIPED CUCUMBER BEETLE troublesome in several Eastern States and in Indiana and Missouri. (p. 593).

BOLL WEEVIL activity increased in North Carolina, South Carolina and Alabama. BOLLWORMS of major concern in Alabama; eggs high in Georgia and increased markedly in delta area of Mississippi; and eggs and larvae light to heavy in Louisiana, with treatments started in Tensas Parish. (pp. 595, 596). FLEAHOPPERS increasing in Arizona, New Mexico and Texas. (p. 596).

FALL WEBWORM heavy in eastern Texas and FOREST TENT CATERPILLAR heavy in Aroostook County, Maine. GYPSY MOTH initial hatching reported. (p. 599). ELM LEAF BEETLE damaging elms in several states. (pp. 599, 600).

FACE FLY of concern in western and southwestern Virginia (p. 601); and MOSQUITOES abundant and troublesome in Idaho, Utah, Texas, Oklahoma, Wisconsin and Vermont. (p. 602).

JAPANESE BEETLE emergence records and activity reported. (p. 604).

INSECT DETECTION: Several new State records reported from Hawaii (p. 608) and face fly recorded for first time in Tennessee and Connecticut (p. 601). New County records reported include alfalfa weevil in Avery, Jackson, Madison, Mitchell and Yancey Counties, North Carolina; clover seed weevil in Knox and Carroll Counties, Illinois (p. 586); soybean cyst nematode in Union County, North Carolina (p. 587); and European pine shoot moth in Spokane County, Washington (p. 598).

CORRECTIONS (p. 605)

ADDITIONAL NOTES (p. 605)

INTERCEPTIONS of special interest at U.S. ports of entry. (p. 607).

HAWAIIAN insect notes. (p. 608). \*\*\*\*\*

Reports in this issue are for week ending June 24, unless otherwise indicated.

WEATHER OF THE WEEK ENDING JUNE 27

Temperatures this week were near or below normal in all sections of the Nation, except in the Far Southwest, the southern Rocky Mountains, and portions of the southern and central Great Plains. El Paso, Texas, once more reported an alltime high temperature, 109° on June 21. Generally cool weather during part of the week from the central Great Plains eastward left average temperatures 3° to 7° below normal over an extensive band. Numerous record-low readings for the date, in the 40's and 50's, were recorded from the Great Lakes-Ohio Valley area on Saturday. In the Idaho area, below-freezing temperatures with severe frost in the southeastern portion caused some crop damage late in the week.

Precipitation in the Western States again was conspicuous by its absence. Scattered showers and some light rain without any significant falls were reported in the Pacific Northwest and in the Plateau States. Frontal and air-mass showers and thunderstorms, some heavy, were scattered across most regions east of the Rocky Mountains in the usual summer pattern. Record-setting high intensity precipitation on Thursday in the lower Ohio Valley left 5.14 inches at Louisville, Kentucky, in 12 hours, and 4 to 5 inches in 24 hours at numerous places in Indiana and Illinois. Moderate to heavy showers on several days in the dry South Atlantic States helped replenish much-needed soil moisture from the Carolinas to Florida, with 1 to 2-inch falls general and local totals of over 4 inches, while scattered showers and thunderstorms over eastern portions of the northern Great Plains, the Great Lakes area, and northern New England maintained adequate to excessive soil moisture. Shortages of soil moisture continued, however, in parts of Montana, Wyoming, and the western Dakotas, in the southeastern portion of Virginia, many local sections of the Gulf States, and in the southwestern quarter of the Nation. The heaviest rain in the Nation this week began on Thursday and continued over the weekend in Texas, as a weak tropical storm moved slowly north-northeastward across the State from the southern coastal section. No significant wind damage has been reported, but precipitation totals in the coastal plain from Corpus Christi and San Antonio northeastward, where extremely dry conditions had been experienced so far this year, generally ranged from 5 to 15 inches with some much heavier local amounts producing widespread flooding. Remnants of this circulation also produced heavy rains in the lower and central Mississippi Valley on Monday. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - MONTANA - During period June 1-15, first and third-instar nymphs present on range in warmer areas of State. Some control measures being planned by individual operators in McCone County. (Roemhild). WASHINGTON - Melanoplus bilituratus counts 25-200 per square yard in Whitman, Franklin, Walla Walla and Adams Counties. Also minor populations of M. bivittatus and M. packardii present. (Busdicker). UTAH - Grasshoppers threateningly abundant at Hill Creek, 50 miles southwest of Ouray, in Uintah Basin, on large areas of rangeland. Spottedly abundant also at North Farmington in Davis County and a large area on Co-Op Flat above Paragonah and Parowan in Iron County. Abundant in some foothill areas of Salt Lake County. (Knowlton). NEW MEXICO - Grasshoppers abundant on alfalfa and small grains in Gila-Cliff area, Grant County. (N. M. Coop. Rpt.). TEXAS - Damaging numbers in several areas of State. (Ridgeway, McCung, Maxwell, Russell). COLORADO - Populations of Melanoplus spp. scattered on rangeland, 1-3 per square yard in some areas and 5-10 per square yard in spots south of Pagosa Springs west of San Juan River in Archuleto County. Counts 5-10 per square yard on rangeland at Bent-Otero County line on highway 50 and 5-30 per square yard in alfalfa in some areas of Rio Grande County. (Colo. Ins. Sur.). OKLAHOMA - Reports from southwest, northwest, central and southeastern areas indicated that grasshopper populations continued generally light in pasture, rangeland and crop areas, with a few isolated spots in Tillman, Harmon and Major Counties showing medium infestations, 6-7 per square yard. Counts along roadsides and crop margins ranged 1-10 per square yard in southwest and central areas to 25 per square yard in an area checked in Major County. Dominant species were M. differentialis, M. bivittatus, M. bilituratus and Brachystola magna. (Hatfield, Presgrove, Hudson, Owens, VanCleave). MISSOURI - Collections of Melanoplus spp. made from 10 locations in Boone County; counts in fields ranged 0.01-30 per square yard, average 6 per square yard; counts in field margins 0-5 per square yard, average 1.2-3.5 per square yard. M. confusus (adults), M. bilituratus (15 percent adults) and M. bivittatus (5-15 percent adults) make up 50 percent of populations. (Blickenstaff, Huggans).

KANSAS - Grasshopper counts ranged from less than 1 to about 12 per square yard in central and west central areas. High populations located in roadside and field margins in Greeley and Wallace Counties. Dominant species were M. bivittatus (fourth instar to adult) and M. bilituratus (fourth and fifth instars), with minor populations of Hesperotettix viridis and Aeoloplides turnbulli present. (Peters). NEBRASKA - Predominant range grasshoppers consist of Ageneotettix deorum, M. packardii and Amphitornus coloradus and averaged less than 3 per square yard. Crop hoppers mostly M. differentialis and M. bivittatus, ranging 5-10 per square yard. (Simpson). SOUTH DAKOTA - An infestation of 200 grasshoppers per square yard in roadside ditch in Yankton County reported; most were instars of M. bilituratus and M. differentialis. (Komanetsky). First and second-instar grasshoppers found in most areas surveyed in small, noneconomic numbers. (Mast). NORTH DAKOTA - Cropland surveys in northeast and north central counties showed generally noneconomic grasshopper infestation. However, scattered stops in Bottineau and Rolette Counties showed nymphal populations ranging light to threatening along roadsides and in soil bank land. Injury to small grain reported at several locations in Bottineau County. M. bivittatus, first to third-instar nymphs, appeared dominant followed by M. bilituratus, M. packardii and M. femur-rubrum. A general hatch of M. femur-rubrum noted in area traveled. (N. D. Ins. Sur.). Rangeland survey conducted in southwest showed major hatch under way in Golden Valley, Slope and Billings Counties. First-instar nymphs ranged 25-40 per square yard, with A. deorum dominant species. (Olson). ILLINOIS - Grasshopper populations in grassy roadsides in central area vary 20-2,000 per 100 sweeps and 0-90 per 100 sweeps in northern area. Practically all observed were first-instar nymphs. (Ill. Ins. Rpt.). NORTH CAROLINA - Nymphs of undetermined grasshoppers abundant in alfalfa in mountain counties. (Farrier). ARIZONA - Mixed grasshopper populations average 1.6 per square yard in Flagstaff area, Coconino County. Field margins and volunteer rye on soil bank land average 7 per square yard. Counts of mixed populations

on different hosts in Peeples Valley area of Yavapai County were as follows: Mixed weeds - 20-40 per square yard; bindweed - 80 per square yard; oats - 64 per square yard. Predominant species were M. bilituratus and Aulocara ellioti. (Ariz. Coop. Sur.). MINNESOTA - Second to fourth-instar nymphs of M. bivittatus light and some hatch of M. femur-rubrum found in southeast. (Minn. Ins. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - CONNECTICUT - Egg masses and feeding injury moderate to low. (Minnum). MARYLAND - First-generation larval infestations in sweet and field corn range light to moderate, with an occasional infestation over 50 percent. First generation egg laying completed on Eastern Shore. (U. Md., Ent. Dept.). ILLINOIS - Emergence complete in all areas with exception of northern section where emergence ranges 76-100 percent. In central section, average egg mass population 36 per 100 corn plants with 45 percent hatch; in west-southwest, egg mass counts range 87-167 per 100 plants with 60 percent hatch; in western section, egg masses range 30-90 per 100 plants with 50 percent hatch; and in northwest, egg masses average 50-100 per 100 plants with no hatch. In general, corn now approaching stage of growth when survival will increase rapidly. From 2-5 percent of corn crop expected to receive majority of egg masses. (Ill. Ins. Rpt.). MISSOURI - Adult emergence appears complete throughout State. Very few egg masses observed. Percent of plants showing leaf feeding damage in north central and northwest areas ranged 2-50; average 20-25 percent. Observations made only in earliest planted fields. Number of larvae found in infested plants ranged 1-7 per plant. (Munson, Thomas, Wood). WISCONSIN - Hatching of eggs noted at Arlington June 20. In general, population of first-generation moths low. (Wis. Coop. Sur.). MINNESOTA - Moth emergence, especially in southern counties, increased sharply. In southwest and south central districts, emergence ranges 66-75 percent. Egg mass counts low, 0-48 per 100 plants. Masses found most often on advanced corn. No hatch observed. (Minn. Ins. Rpt.). NEBRASKA - Egg masses averaged 3.5 per 50 plants in Buffalo, Custer, Dawson, Merrick, Polk and Butler Counties; highest count 13 per 50 plants in Merrick County. Corn plants ranged 4-16 inches in height. Several plants observed with shot-hole feeding from newly hatched larvae. (Simpson).

CORN EARWORM (Heliothis zea) - NEW JERSEY - Flights continue steady; more than usual "budworm" activity noted June 20 in Cape May County on sweet corn. Eggs present on silks in most fields. (Ins.-Dis. Newsl., June 21). DELAWARE - Larvae quite common in corn throughout State, with moderately heavy feeding injury in some areas of Sussex County. Larvae present in alfalfa in New Castle County. (Burbutis, Mason). MARYLAND - Occasional larva found in whorls of field corn in Somerset and Queen Annes Counties. (U. Md., Ent. Dept.). GEORGIA - Light to heavy infestations in sweet corn in Emanuel and Candler Counties. (Johnson). ALABAMA - Causing light to moderate damage to sweet corn in Covington County. (Stephenson). MISSOURI - Very few larvae observed in north central and northwest areas feeding in whorls of corn. (Munson, Thomas, Wood). OKLAHOMA - Generally light in corn checked in north central and northeast areas where counts ranged from occasional to 14 per 100 stalks. Counts high in few fields of corn and grain sorghum surveyed in Marshall (100 per 100 stalks) and Choctaw (5 eggs per stalk) Counties. Counts continued very light in alfalfa surveyed over State. (Robinson, Young; VanCleave, Goin, Vinson, Hatfield, Owens). TEXAS - Very light in corn in Freestone, Red River and Bowie Counties. (Hawkins).

ARMYWORM (Pseudaletia unipuncta) - INDIANA - Small numbers reported from several localities and a serious outbreak noted on oats and rye in Jasper County. (Gould). ILLINOIS - Treatments applied to wheat in eastern and central sections of State. Surveys in these sections revealed 0-6 larvae per square foot, with up to 15 larvae per square foot being reported from other fields. Larvae maturing, but reasonable percent of small larvae still being observed. In northern area, few very small larvae beginning to appear. (Ill. Ins. Rpt.). WISCONSIN - Larvae, about three-fourths grown, observed in southern oat fields,

but extremely rare. (Wis. Coop. Sur.). MINNESOTA - Few moths found in black-light traps at Worthington, Waseca and Crookston. No larvae found. (Minn. Ins. Rpt.). NEBRASKA - Counts in 3 fields of wheat blown down in Butler County ranged 8-12 larvae per square foot. Aerial spraying planned by a few farmers involved. Occasional fields of partially down wheat in Custer, Buffalo and Polk Counties averaged from less than 1 to 1 larva per square foot. Also, several reports of damage from other eastern counties. (Simpson). KANSAS - Counts in wheat in central and west central areas less than 1 per sweep. (Peters). DELAWARE - Common in field of oats in eastern Kent County. (Burbutis, Mason).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - NORTH CAROLINA - Infesting corn in Iredell County (McNeelay, Farrier) and 5-acre field in Nash County (Peebles, Farrier). DELAWARE - First larvae of season found feeding on soybeans in eastern Sussex County. (Burbutis, Mason).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - TEXAS - Infestations average 25-30 percent in Freestone County; moths just emerging. Corn silks just turning brown. In Bowie and Red River Counties, larval infestations average 5-10 percent in corn. (Hawkins). OKLAHOMA - Light, 12 percent of stalks infested, in field of sweet corn in Marshall County. (Vinson).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - MARYLAND - Light to moderate in whorls of field corn in Somerset and Prince Georges Counties. (U. Md., Ent. Dept.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Light infestation on grain sorghum in Brazos County. (Randolph).

CORN ROOT WEBWORM (Crambus caliginosellus) - MARYLAND - Larvae seriously injured 35 acres of young corn at Cecilton, Cecil County. (U. Md., Ent. Dept.; June 17).

BLACK CUTWORM (Agrotis ipsilon) - OREGON - Larvae damaging corn plantings in mid-Willamette Valley. Some controls applied. (Capizzi). MISSOURI - Continues to damage corn in very wet areas; size of larvae ranged from very small to almost full grown, with majority being one-half to three-quarters grown. (Munson, Thomas, Wood). WISCONSIN - Very numerous in some low lying corn fields in Mazomanie area; treatments continued. (Wis. Coop. Sur.). ILLINOIS - Reported commonly throughout State, with 15-20 percent of corn plants in some fields badly damaged. (Ill. Ins. Rpt.). INDIANA - Damage to corn reported from many counties, with serious losses reported from Jasper and Clay Counties. (Gould). OHIO - Destroyed 90 percent of cornfield in Licking County and reported particularly serious on corn and tobacco in Darke County. Also reported from Knox County. (Blair, Holdsworth, Kuester). PENNSYLVANIA - Larvae of all sizes serious on corn in Bedford County, with one field of 15 acres about 30-40 percent killed. (Udine). Corn also reported damaged in Franklin and Blair Counties. (Pepper, Udine). VIRGINIA - Cutworms believed to be A. ipsilon reported damaging several crops. Corn damage reported from Loudoun, Middlesex, Culpeper, Westmoreland and King and Queen Counties and soybean damage reported in Richmond and Westmoreland Counties and several other counties in northern neck of State. (Rowell). MARYLAND - A serious outbreak occurred on young corn throughout State. Cool, wet weather has apparently favored population buildups. Serious infestations seen or reported from 7 counties and many fields treated. Larvae now maturing and some pupae being found. (U. Md., Ent. Dept.). NORTH CAROLINA - Destroyed an entire field of corn in Yadkin County. (Smith, Rabb).

PALE-SIDED CUTWORM (Agrotis orthogonia) - MONTANA - Common and damaging during period June 1-15 in wheat and corn fields in northeastern area. Several fields of barley in Lewis and Clark County also infested. An unidentified cutworm damaged safflower in Sheridan and Roosevelt Counties and Chorizagrotis auxiliaris common in wheat fields in McCone County and scattered specimens of the latter species taken from grain fields in other areas of State. (Roemhild).

VARIEGATED CUTWORM (*Peridroma saucia*) - NEBRASKA - Larvae found in most alfalfa fields, but averaged less than 1 per square foot; one field in Custer County averaged 10 under each bale. (Simpson).

CUTWORMS (undetermined) - NORTH DAKOTA - Severe injury to corn, small grain and alfalfa reported from Balta area, Pierce County. Larval infestations ranged 6-10 per square foot. (N. D. Ins. Sur.). ILLINOIS - Counts in clover in south-eastern area average 2 per square foot. (Ill. Ins. Rpt.).

WHEAT CURL MITE (*Aceria tulipae*) - KANSAS - During week of June 12-18, trace infestations (0.1-5 per kernel) found in Bourbon and Crawford Counties and medium to heavy infestations (6-50 or more per kernel) found in Shawnee and Douglas Counties. (Somsen). MISSOURI - Trace infestations (0.1-5 per kernel) found in Vernon, Bates and Cass Counties in southeast area and medium to heavy (6-50 per kernel) infestations found in Newton County, southwest area. (Somsen).

WHEAT STEM SAWFLY (*Cephus cinctus*) - NORTH DAKOTA - Adults averaged 1 per 10 sweeps in Bottineau County. (N. D. Ins. Sur.).

WHEAT STEM MAGGOT (*Meromyza americana*) - NEBRASKA - Occasional to light numbers observed and collected in wheat fields. (Simpson).

HESSIAN FLY (*Phytophaga destructor*) - OREGON - No infestations of winter wheat or spring grains observed or reported in mid-Willamette Valley counties having a history of severe damage in previous years. (Capizzi).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NORTH DAKOTA - General infestation exists throughout eastern and north central area on barley. Populations range from noneconomic to very severe. Field counts in central Red River Valley from Fargo to Larimore and Grand Forks showed 31 percent of stems infested with 1-50 per stem. Barley development averages in the joint stage in this area. Populations mostly light but trace infestations found at all stops west to Esmond and north to Bottineau and Canadian border counties. Barley crop is 2-3 weeks later than usual in northern counties. This may predispose barley to widespread attack. Predators extremely light throughout entire area at present. First recorded economic infestation of *R. maidis* occurred in State during 1955; injury that year confined mostly to late-planted barley fields where development did not exceed shot blade stage. (N. D. Ins. Sur.). NEBRASKA - About 70 percent of corn showed very light infestations. (Simpson). OKLAHOMA - Light infestations common in corn and grain sorghum in eastern half of State. Medium infestations reported from fields in both Wagoner and Pushmataha Counties where counts averaged 50 per linear foot on 24-inch plants. (Robinson, Young, VanCleave, Goin).

UTAH - Rarely numerous on corn or barley in State. (Knowlton). NEVADA - Populations increasing rapidly on barley in Churchill, Lyon and Washoe Counties, with several fields being treated. Predators and parasites very low. Counts averaged 100-250 per sweep in Smith and Mason Valleys, Lyon County, and 50-300 per sweep in Reno-Sparks area, Washoe County. (Bechtel, Parker).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - ILLINOIS - Aphids, primarily *M. granarium*, vary 0-350 per 100 sweeps on wheat in central area and 640-4,000 per 100 sweeps on oats in northern area. (Ill. Ins. Rpt.). WISCONSIN - Present in nearly all oat fields. (Wis. Coop. Sur.). NORTH DAKOTA - Counts in small grains average no more than a trace in east and north central counties. (N. D. Ins. Sur.). SOUTH DAKOTA - Found in very small numbers on some small grain fields along eastern edge of State. No damage observed. (Mast). NEVADA - Averaged 10 per sweep in barley in Smith Valley, Lyon County, and 3-8 per sweep in barley in Reno-Sparks area, Washoe County. (Bechtel, Parker).

GREENBUG (*Toxoptera graminum*) - WISCONSIN - Surveys in most areas of State indicate population is scarce, rare or absent in vast majority of fields examined. Highest in Portage County, with some counts as high as 10 per sweep. (Wis. Coop. Sur.). MINNESOTA - Light in southwest and west central districts. (Minn. Ins. Rpt.). SOUTH DAKOTA - Found in small grain fields in counties

checked along eastern border of State; no damage observed. Reported as far west as Redfield, Spink County. (Mast).

APHIDS - NEW JERSEY - Barley yellow dwarf virus present throughout State. Some fields of oats 90 percent diseased by this aphid-transmitted virus. (Ins.-Dis. Newsl.). IDAHO - Numerous species of aphids rapidly developing on grains in 5 northern counties, not including Shoshone. (Gittins).

CHINCH BUG (Blissus leucopterus) - NORTH CAROLINA - Infestations appearing in corn in Alamance, Warren and Vance Counties. (Dodson, Hardage, Chamberlin, Farrier). OKLAHOMA - Although counts averaged 4 per stalk in some corn surveyed in northeast, none to light ratings given most fields checked. None to light infestations reported in other areas surveyed (north central and southeast). Both nymphs and adults reported from all areas surveyed. (Robinson, Young, VanCleave, Goin).

BUFFALO TREEHOPPER (Stictocephala bupalus) - SOUTH DAKOTA - Found occasionally on oats in very small numbers. (Mast).

BROWN STINK BUG (Euschistus servus) - TEXAS - Averaged 5 per stalk on corn in Freestone County. (Hawkins).

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Adult infestation in barley present throughout northeast and north central areas. Surveys indicate this is one of heaviest and widespread infestations in past 5 years. Barley fields checked ranged from seedling to shot blade in development. Nearly all fields showing 100 percent of stems infested with an average of 3.1 adults per stem. (N. D. Ins. Sur.). MINNESOTA - Thrips, believed to be this species, light in Red River Valley; a few fields had 2-4 per head. (Minn. Ins. Rpt.).

THRIPS (undetermined) - IDAHO - Infesting wheat in Melba area; most plants exhibit damage ranging from slight to moderate. (Scott). MARYLAND - Common on sweet and field corn in all sections. (U. Md., Ent. Dept.). GEORGIA - Moderate to heavy infestations on peanuts in Emanuel, Candler, Jenkins and Burke Counties. (Johnson).

CORN FLEA BEETLE (Chaetocnema pulicaria) - DELAWARE - Adults remain present in corn in New Castle County causing very light feeding injury. (Burbutis, Mason). MARYLAND - Common on sweet corn in all sections. (U. Md., Ent. Dept.).

FLEA BEETLES - CONNECTICUT - Light to heavy in some fields of sweet corn; ranges from 1 per 5 plants to 3 per plant. (Minnum). DELAWARE - Phyllotreta sinuata adults fairly common in Kent County Soybean field. (Burbutis, Mason).

SEED-CORN MAGGOT (Hylemya cilicrura) - PENNSYLVANIA - Found in most corn fields in south central area; caused weakened plants. (Pepper).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ILLINOIS - Adults ranged 0-10 per 100 corn plants, with an average of 12 percent of plants showing leaf feeding. Adults found feeding generally throughout State on soybeans; population in north being lightest. (Ill. Ins. Rpt.). OKLAHOMA - Medium infestations, 2-3 per sweep, noted in most alfalfa surveyed in Choctaw County. Counts averaged 1 per stalk in field of corn in same area. (Goin). DELAWARE - Adults present in soybeans in Kent County. (Burbutis, Mason).

WHITE GRUBS - NORTH DAKOTA - Heavy infestation destroyed 200 acres of flax near Chaffee, Cass County. An average of 3-5 grubs per square foot present. (N. D. Ins. Sur.). UTAH - Damaging a number of lawns in Salt Lake City-Sandy area of Salt Lake County. (Knowlton). VIRGINIA - Caused widespread damage to young corn in several eastern and northern counties during late May and early June. (Rowell).

A WIREWORM (Melanotus communis) - NORTH CAROLINA - Caused 25 percent loss in second-planting cornfield in Cleveland County. (Dameron, Neunzig).

A JUNE BEETLE (Polyphylla sp.) - NEW MEXICO - Larvae a problem in lawns in Dona Ana County. (N. M. Coop. Rpt.).

A KATYDID (Steiroxys sp.) - WASHINGTON - Populations 20-25 per square yard in south central Benton County; now mostly adults. (Busdicker).

CICADAS - ARIZONA - Heavy populations of Diceroprocta eugraphica on desert plants in Willcox area of Cochise County. (Ariz. Coop. Sur.). WYOMING - Many infestations of Okanagana luteobasalis reported on rangeland throughout State. (Fullerton).

WHITE-LINED SPHINX (Celerio lineata) - OREGON - An infestation of rangeland vegetation in Harney County exists from Denio north to Burns Junction and Jordan Valley in Malheur County. Mature larvae of both black and yellow forms averaged 5 per square yard June 19-20. No infestation of cultivated crops reported. (Larson).

OMNIVOROUS LEAF TIER (Cnephasia longana) - CALIFORNIA - Occurring on pasture plants in Fort Dick area, Del Norte County. This is considerably north of other occurrences in the State. (Cal. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - NEVADA - Averaged 100-150 per sweep in alfalfa in Mason Valley and 50-75 per sweep in Smith Valley, Lyon County (Parker), and 15-20 per sweep in Douglas County (Martinelli, Rebuffo). UTAH - Causing light to moderate damage to some alfalfa in Beryl-Enterprise area of Iron and Washington Counties. Much more abundant in second-crop alfalfa than generally occurred for first crop in Salt Lake and Utah Counties; counts often average 100-250 per sweep. (Knowlton). WYOMING - Averaged 3 per sweep in alfalfa in Fremont County and Big Horn Basin. (Fullerton). NEW MEXICO - Infestations remain light in most areas. (N. M. Coop. Rpt.). COLORADO - Counts per 100 sweeps in alfalfa were 500-4,000 in Prowers and Bent Counties; 200-1,000 in Crowley, Otero and Pueblo Counties; 1000-3,000 in La Plata County; and 200-500 in Larimer County. (Colo. Ins. Sur.). OKLAHOMA - Populations continue to decline in alfalfa checked throughout State. (Goin, Hatfield, Stiles, Owens, Young, VanCleave). NEBRASKA - Counts in alfalfa ranged 10-400 per 10 sweeps, averaging 200 in Buffalo, Custer, Dawson, Merrick, Polk and Butler Counties. (Simpson). MINNESOTA - Counts reduced; counts per 10 sweeps range 6-60 in southeast, 5-30 in south central, 0-26 in southwest, 2-35 in west central and 5-10 in northwest. (Minn. Ins. Rpt.). ILLINOIS - Counts range 60-2,080 per 100 sweeps on second-growth alfalfa. (Ill. Ins. Rpt.). MISSOURI - Numbers generally very low in alfalfa throughout north central and northwest areas. Counts ranged 0-7 per sweep except in fields where first hay crop has not been removed, then counts ranged 20-50 per sweep. (Munson, Thomas, Wood).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations increased, medium to heavy in some Gila Valley fields in Yuma County. Increase just beginning to show in Yuma Valley and not yet noticeable on Yuma Mesa. In central area, few fields of more susceptible alfalfa varieties have increased populations; but, in general, infestations low throughout area. (Ariz. Coop. Sur.). NEW MEXICO - Generally light, with occasional moderately heavy infestations in alfalfa in southern counties. (N. M. Coop. Rpt.). OKLAHOMA - Populations light in alfalfa throughout State. Highest count reported was in field in Jackson County, 80 per square foot of crown area. (Goin, Hatfield, Stiles, Owens, Young and VanCleave). KANSAS - Two specimens collected week of June 12-18 in Ellis County, central area; first collections of year in area. (Harvey).

SWEETCLOVER APHID (Therioaphis riehmi) - UTAH - Not numerous in sweetclover in Tooele, Utah and Salt Lake Counties. (Knowlton).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - ILLINOIS - Adults varied 0-40 per



100 sweeps in second-growth alfalfa. (Ill. Ins. Rpt.). WISCONSIN - Adults fairly abundant in southern section, with nymphs present in northwest. (Wis. Coop. Sur.). SOUTH DAKOTA - Not economic in alfalfa fields. (Mast). NEBRASKA - Most alfalfa fields averaged 15 per 10 sweeps. One field in Custer County averaged 275 per 10 sweeps and showed heavy blasting of blooms. (Simpson).

RAPID PLANT BUG (*Adelphocoris rapidus*) - WISCONSIN - Adults fairly abundant in southern section, with nymphs present in northwest. (Wis. Coop. Sur.). SOUTH DAKOTA - Large numbers found in alfalfa in eastern area; counts average 19 per 10 sweeps, with counts as high as 15 per sweep in some fields. (Mast).

LYGUS BUGS (*Lygus* spp.) - NEVADA - Averaged 7-15 per sweep in alfalfa in Smith and Mason Valleys, Lyon County (Parker) and 15-20 per sweep in Ormsby County (Martinelli, Rebuffo). NEW MEXICO - Averaged 15-23 adults and 8-14 nymphs per 10 sweeps in alfalfa in southern Dona Ana County. (N. M. Coop. Rpt.). UTAH - Moderately numerous in alfalfa in Salt Lake and Utah Counties, generally; 85 percent *L. elisus*. (Knowlton). WYOMING - Adults averaged 1 per sweep and nymphs 2 per sweep in 8 alfalfa fields checked in Fremont County. Adults and nymphs averaged 1 per sweep in alfalfafield checked in Big Horn Basin. (Fullerton). COLORADO - Counts per 100 sweeps in alfalfa were 400-500 in Montrose County prior to first cutting. (Colo. Ins. Sur.). OKLAHOMA - Continued to decrease in alfalfa fields checked; counts of 1-2 per sweep most common over major portion of State. Counts in fields surveyed in Choctaw County ranged much higher, 3-8 per sweep. (Goin, Hatfield, Stiles, Owens, Young, VanCleave). TEXAS - Averaged 5-8 per sweep in alfalfa in Bowie County. (Hawkins). ILLINOIS - Adults of *L. lineolaris* varied 0-160 and nymphs 10-200 per 100 sweeps in second-growth alfalfa. (Ill. Ins. Rpt.).

POTATO LEAFHOPPER (*Empoasca fabae*) - DELAWARE - No adult increase noted; nymphs present in Sussex County. (Burbutis, Mason). MARYLAND - Numbers increased on alfalfa in central area, averaging over 5 per sweep in some fields. (U. Md., Ent. Dept.). OHIO - Counts in 5 alfalfa fields in northern area ranged 1 adult per 4 sweeps to 1 per sweep. No damage apparent and unlikely in second growth. (Holdsworth). WISCONSIN - Populations low in alfalfa but generally present; averaged 2-3 adults per 100 sweeps in northwestern area. (Wis. Coop. Sur.). MINNESOTA - Counts remain very low in southeast, south central, southwest and west central districts. (Minn. Ins. Rpt.). NORTH DAKOTA - Populations extremely light, with single specimens recovered from legumes and small grains as far north as Cavalier County. (N. D. Ins. Sur.). MISSOURI - Counts in alfalfa throughout north central and northwest areas ranged 3-15 per sweep. Average was 4 per sweep. (Munson, Thomas, Wood).

SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*) - NEBRASKA - Averaged 2 per 10 sweeps in most alfalfa and small grains. (Simpson). NORTH DAKOTA - Populations in legumes and small grains generally light in eastern section, 1-2 per 10 sweeps. Counts in Bottineau, Rolette and Towner Counties averaged 3-5 per sweep; highest population recorded in past 3 years. (N. D. Ins. Sur.).

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) - ILLINOIS - Adults varied 0-420 per 100 sweeps in second-growth alfalfa. (Ill. Ins. Rpt.). WISCONSIN - Nymphs observed as far north as Ashland in alfalfa; numbers low. (Wis. Coop. Sur.). DELAWARE - Adults generally reduced. (Burbutis, Mason). PENNSYLVANIA - Adults very abundant generally in legumes. (Pepper).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - TEXAS - Averaged 1-2 per sweep in alfalfa in Brazos County. (Randolph). OKLAHOMA - Very light populations, up to 0.3 per sweep and up to 2.5 per square foot of crown area, reported from widely scattered areas. None noted in most alfalfa surveyed, but infestations becoming more common. (Goin, Hatfield, Stiles, Owens, Young, VanCleave). UTAH - Moderately numerous in area of Washington County. (Knowlton).

SPITTLEBUGS - IDAHO - Unidentified species extremely abundant on crops and native vegetation throughout northern area. Populations running as high as 18 nymphs

per 4-inch growing stem on alfalfa in parts of Kootenai, Bonner and Boundary Counties. (Gittins).

ALFALFA WEEVIL (Hypera postica) - OREGON - Infestations heavier than normal in Malheur, Baker and Wallowa Counties. Poor larval control obtained with insecticides applied at registered dosages. (Every). MONTANA - Larvae causing heavy damage to untreated alfalfa in Choteau County during period June 1-15. (Roemhild). WYOMING - Larvae averaged 3 per sweep in alfalfa in Big Horn Basin. About 80 percent of fields cut. (Fullerton). UTAH - Damage has been more severe than for many years in Uintah County alfalfa where new early spring stubble treatment was omitted. Damage often serious in Duchesne, Carbon and Emery Counties also. Holding back second-growth alfalfa in some of the more seriously infested fields in Salt Lake, Cache, Weber and Utah Counties; 3,000 acres seriously infested in Piute County and 1,000 acres sprayed for larval control before first crop cut in Salt Lake County. (Knowlton). COLORADO - Larval counts per 100 sweeps in alfalfa were 30-50 in La Plata County; 200-300 in Larimer County; 0-10 in Bent and Prowers Counties; and 10-30 in Crowley, Otero and Pueblo Counties. (Colo. Ins. Sur.). NEW YORK - Feeding activities slowing down; first brood practically entirely in pupation. (N.Y. Wkly. Rpt., June 20). PENNSYLVANIA - Some larvae still feeding on second-crop alfalfa in south central area, with pupae and adults prevalent. (Pepper). Larvae and few pupae present in alfalfa in southwest. (Udine). MARYLAND - Larval damage, particularly to stubble, continues from Allegany to Howard Counties, although larval numbers rapidly diminishing, usually less than 5 per sweep. New adults common in many fields. (U. Md., Ent. Dept.). DELAWARE - No larval increase noted; adults present. (Burbutis, Mason). NORTH CAROLINA - Reported in Avery, Jackson, Madison, Mitchell and Yancey Counties for first time. (Farrier).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - MARYLAND - Adults averaged 5 per 25 sweeps in red clover in St. Marys County. (U. Md., Ent. Dept.). DELAWARE - Adults present in field of alfalfa in Sussex County. (Burbutis, Mason).

CLOVER LEAF WEEVIL (Hypera punctata) - IDAHO - Larvae generally numerous on alfalfa throughout northern area. (Gittins).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - UTAH - Conspicuously marking sweetclover foliage in many Salt Lake and Utah County communities. (Knowlton).

CLOVER ROOT CURCULIO (Sitona hispidula) - CALIFORNIA - Medium on red clover in Smith River area, Del Norte County. (Cal. Coop. Rpt.).

A WEEVIL (Sitona scissifrons) - SOUTH DAKOTA - Found in alfalfa in all counties checked in east central and northeast areas, with averages of 4-14 per 10 sweeps. (Mast).

CLOVER ROOT BORER (Hylastinus obscurus) - CALIFORNIA - Medium infestation on red clover in Smith River area, Del Norte County. (Cal. Coop. Rpt.).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - ILLINOIS - Collected for first time in Knox and Carroll Counties. (Ill. Ins. Rpt.). WASHINGTON - Collected for first time in new white clover seed area south of Pomeroy, Garfield County; only 0-7 per 25 sweeps in east edges of fields next to wild land; also in new field near Farmington, Whitman County. (Johansen). CALIFORNIA - Medium infestation on red clover in Smith River area, Del Norte County. (Cal. Coop. Rpt.).

VETCH BRUCHID (Bruchus brachialis) - OREGON - Began laying eggs in Willamette Valley week ending June 18. Infestations generally heavier than normal. (Every).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults present in soybeans in Sussex County. (Burbutis, Mason). MARYLAND - Common in red clover fields in St. Marys County. (U. Md., Ent. Dept.).

BLISTER BEETLES - NEBRASKA - Epicauta cinerea increasing in all alfalfa fields, with highest count 4 per 10 sweeps in Custer County. (Simpson). COLORADO - Lytta nuttalli observed in alfalfa in Rio Grande County. (Colo. Ins. Sur.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ILLINOIS - Populations in northern area varied 0-2 per 6 linear feet of row. Early planted soybeans most heavily infested. Larvae, tentatively identified as this species, found as far north as Springfield. (Ill. Ins. Rpt.). TEXAS - Light damage reported to soybeans in Bowie County. (Hawkins).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NEBRASKA - All fields had very light infestations, averaging less than 1 per 10 sweeps. (Simpson). WYOMING - Larvae averaged 2 per 25 sweeps in alfalfa checked in Fremont County and in Big Horn Basin. (Fullerton). COLORADO - Counts per 100 sweeps in alfalfa were 40 in La Plata County; 20 in Larimer County; 10-20 in Otero, Bent and Prowers Counties; and 10-100 in Crowley and Pueblo Counties. (Colo. Ins. Sur.). TEXAS - About 2 per 5 sweeps in alfalfa in Brazos County. (Randolph). CALIFORNIA - Heavy populations in conjunction with Prodenia praefica on alfalfa in Chico, Butte County. (Cal. Coop Rpt.).

ALFALFA LOOPER (Autographa californica) - MONTANA - Abundant in Choteau County alfalfa fields during period June 1-15. (Roemhild). NEVADA - Causing light to moderate damage to red clover in Orovida, Humboldt County. (Galloway).

SALT-MARSH CATERPILLAR (Estigmene acrea) - DELAWARE - First larvae of season found feeding in soybeans and corn in Kent County. (Burbutis, Mason).

A CLOVER BUD CATERPILLAR (Grapholitha conversana) - WASHINGTON - Adult collected in new white clover seed field in Whitman County. (Johansen).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Moderate infestations on peanuts in Seminole County. (Hall, June 17).

GREEN CLOVERWORM (Plathypena scarba) - DELAWARE - Larvae averaged 3-4 per 10 sweeps in most clover and alfalfa throughout State. (Burbutis, Mason).

BEET WEBWORM (Loxostege sticticalis) - MONTANA - Adults abundant in eastern area of State during first part of June. Hatching had occurred in Miles City area by June 15. (Roemhild).

MITES - NEVADA - Severely damaging timothy in 150-acre timothy-clover field in Mason Valley, Lyon County. (Batchelder). ARIZONA - Light infestations of Tetranychus cinnabarinus present in Yuma County alfalfa used for hay and very heavy infestations damaging alfalfa in some seed fields. (Ariz. Coop. Sur.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - NORTH CAROLINA - Infestation found on 20-acre property in Union County during late April; this is first infestation in the county. (PPC).

A TENEBRIONID (Blapstinus substriatus) - MONTANA - Found in large numbers in a safflower field in Sheridan County during period June 1-15. (Roemhild).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - MAINE - No entries found week ending June 17. (Boulanger). NEW YORK - Adult flight continues at low level, due to unfavorable evening temperatures in eastern section of State. Activity appears slowed down in Ulster County. No new entrances found in sprayed orchards in Columbia County since original flareup at beginning of activity; more activity expected following warm evenings of June 13 and 17. Flight also tapered down in Clinton County after early June flurry. Heaviest emergence to date in Monroe County observed June 16-17; apple stings now easily found. No moth activity noted in Wayne County. Moth emergence from cages at Geneva totaled 139 during period June 8-20. (N. Y. Wkly. Rpt., June 20). NEW JERSEY - No fresh injury reported recently. (Ins.-Dis. Newsl., June 21). MARYLAND - Moth emergence continues at Hancock but peak has passed. First-instar larvae now in apples. (U. Md., Ent. Dept.). OHIO - First entry noted on untreated fruit June 5 and on treated fruit June 13; infestation low as of June 24. (Cutright). First entry noted June 7 in Ashtabula County. (Bossley). INDIANA - Emergence from packing house apples dropped sharply in Orleans area, with peak emergence of 44 occurring on June 15, 16 and 17, respectively. A peak hatch was noted as beginning in the orchard June 20; will probably continue until after June 25. A resulting heavy hatch may be expected July 30-August 7; just how heavy will depend upon number of successful entries made at present. (Marshall, June 21). Adults still being taken in bait traps and from emergence cages in Vincennes area. Larvae of all ages present in apples; some have left fruit, spun cocoons and pupated. There will be a decided overlap of broods in the area this season. (Cleveland, June 14-20). ILLINOIS - First brood generally very light in Carbondale area. First of second-brood larvae should be entering apples about July 3-4. Present time is between broods. Generally, control is excellent. (Chandler, June 22). MISSOURI - Control so good that status is difficult to ascertain. However, in unsprayed apples, nearly full-grown larvae are present and generally, over State, peak of first-brood activity is now past. (Wkly. Rpt. Fr. Gr.). WISCONSIN - Blacklight trap catches June 15 and 18, respectively, were: Gays Mills - 2 and 0; Middleton - 1 and 2. In Door County, pupal and adult populations are light to medium. (Wis. Coop. Sur.). OKLAHOMA - First-generation larvae noted leaving apples in large numbers for pupation June 12-18 in Payne County. (Bieberdorf). UTAH - Several moths taken in light trap at Logan, June 16-17. (Knowlton).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - NEW YORK - First brood now pupating in Orange County. (N. Y. Wkly. Rpt., June 20). MARYLAND - Second-generation moth emergence underway at Hancock, Washington County. (U. Md., Ent. Dept.). OHIO - Present in all orchards; pupae now present and most larvae in last instar. (Cutright). INDIANA - Another series of adults presently being taken in bait traps in Vincennes. (Cleveland, June 14-20). ILLINOIS - Close observation during past week failed to show any hatching in the Carbondale area. (Chandler, June 22).

FRUIT TREE LEAF ROLLER (*Archips argyrospila*) - NEW YORK - Adults emerged in large numbers during past week in eastern section. Several related species also found in bait traps, being especially abundant in hedgerows and woodland edges; probably contributing to generally heavy leaf roller situation this year, but A. argyrospila is principal species involved. A. argyrospila caused slight damage in one apple orchard in Westchester County; appeared to be stopped by first control application. (N. Y. Wkly. Rpt., June 20).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - NEW YORK - Caused heavy terminal injury in untreated Orleans County peach orchard. (N. Y. Wkly. Rpt., June 20). ILLINOIS - First brood generally light. Second brood just beginning, with some freshly wilted peach terminals noted in Carbondale area. (Chandler, June 22). INDIANA - Bait-trap catches tapering off in Vincennes area; some rather large larvae found in peaches. (Cleveland, June 14-20). MISSOURI - Reports from southeast area indicate peak of current brood is past. (Wkly. Rpt. Fr. Gr.).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - WISCONSIN - Moderate to heavy larval and pupal populations present in Door County cherry orchards. (Wis. Coop. Sur.).

PLUM CURCULIO (Conotrachelus nenuphar) - NEW YORK - Unusual instance of larval survival in Cortland apples noted recently in eastern section; oviposition cuts remained open instead of growing over and larvae were able to develop normally. (N. Y. Wkly. Rpt., June 20). MARYLAND - More infested apples found in commercial orchards to date than in past few years. (U. Md., Ent. Dept.). ILLINOIS - Between broods at Carbondale. Will be last of June or early July before next brood appears. (Chandler, June 22). NORTH CAROLINA - Caused complete destruction of damson plum tree in Sampson County. (Gurkin, Farrier). GEORGIA - Still no complaints of damage in peaches harvested to June 22 from orchards in Ft. Valley area. (Snapp).

EUROPEAN RED MITE (Panonychus ulmi) - MAINE - Building up generally; first summer generation well along in nymphal stages. (Boulanger, June 17). NEW YORK - Numerous in some Columbia County orchards, generally controlled in rest. Control continues good in Clinton County, as of June 15. Building up in Orleans County. (N. Y. Wkly. Rpt.). NEW JERSEY - Populations low. (Ins.-Dis. Newsl., June 21). OHIO - Adults average 4-5 per leaf, with large numbers of eggs present, in many Ashtabula County orchards. (Bossley). Numbers building up in central area untreated orchards; 0-4 adults per leaf. (Blair, Holdsworth). INDIANA - Leaves being bronzed in Vincennes area where no controls have been used. (Cleveland, June 14-20). ILLINOIS - Generally quite light in Carbondale area, but this is season for increase. (Chandler, June 22). WISCONSIN - Populations on apples throughout Door County are very low. Summer eggs are hatching. (Wis. Coop. Sur.). MISSOURI - Present in some orchards; some foliage injury has resulted in one central area orchard. (Wkly. Rpt. Fr. Gr.).

APPLE APHID (Aphis pomi) - MAINE - Population increasing; infestations remain spotty, but colony sizes are on increase. Damage negligible to June 17. (Boulanger). PENNSYLVANIA - Appearing on water sprouts and tender terminal growth of apples in south central section. (Pepper). MARYLAND - Increasing on apples, especially water shoots, in the Hancock area, Washington County. (U. Md., Ent. Dept.). OHIO - Migrants establishing new colonies; not severe to June 15. (Cutright). Building up rapidly in Ashtabula County, June 20. (Bossley). ILLINOIS - Has increased in some Carbondale area orchards; should be watched. (Chandler, June 22).

WOOLLY APPLE APHID (Eriosoma lanigerum) - NEW MEXICO - Light to heavy on backyard apple trees in Carlsbad, Eddy County. (N. M. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MASSACHUSETTS - First adults of season collected at Amherst and Waltham. (Crop Pest Cont. Mess.). NEW YORK - Adult emergence started in cages at Poughkeepsie on June 13; only small number had appeared by June 20. (N. Y. Wkly. Rpt.). NEW JERSEY - First adults from blueberries trapped in Atlantic County June 17; averaged 0.3 per trap. None have been collected in Burlington County. If pattern follows that of other years, first controls will be required about June 27 in Atlantic County and around July 1 in Burlington County. (Ins.-Dis. Newsl., June 21).

SPIDER MITES (Tetranychus spp.) - DELAWARE - T. telarius building up on apples in Kent County. (MacCreary). ILLINOIS - T. canadensis increasing in some apple blocks in Carbondale area. (Chandler, June 22). MISSOURI - T. telarius found in most areas of State, although not in outbreak numbers. (Wkly. Rpt. Fr. Gr.).

ORCHARD MITES - NEW YORK - Difficult to find in Westchester County orchards. (N. Y. Wkly. Rpt., June 20). INDIANA - Populations on apples in Orleans area will become more threatening from present through mid-August at least. (Marshall, June 21). NEW MEXICO - Light to heavy infestations of Bryobia rubrioculus found on backyard apple trees at Carlsbad, Eddy County. (N. M. Coop. Rpt.).

PEAR-SLUG (Caliroa cerasi) - DELAWARE - Very abundant on pear trees in northern Kent County. (Bray).

CORN EARWORM (Heliothis zea) - SOUTH CAROLINA - Causing some damage to peach fruits at Sand Hill Experiment Station. (Nettles et al., June 14).

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - MISSOURI - A few have appeared in an isolated orchard or two in central and northwest areas, but period is apparently between broods. (Wkly. Rpt. Fr. Gr.).

PEACH TREE BORERS (Sanninoidea spp.) - ILLINOIS - First emergence of S. exitiosa moths due about July 1-4 in Carbondale area. (Chandler). OREGON - Heavy infestations of S. exitiosa graefi observed in Washington County; larvae one-third grown to mature June 12, with no pupation noted. Emergence believed due later than during 1959. Damage severe in 1 prune and 1 peach orchard, both untreated. (Every).

SCALE INSECTS - MARYLAND - Lecanium nigrofasciatum found in 2 peach orchards in Hancock area, Washington County. Aspidiotus perniciosus infesting sour cherries in same area; growth of trees involved has been held back. (U. Md., Ent. Dept.).

AN ERIOPHYID MITE (Vasates fockeui) - OREGON - Heavy infestations observed on Washington County prunes, week ending June 18; averaged over 100 per leaf on more heavily infested, unsprayed trees. (Every).

CHERRY MAGGOT (Rhagoletis cingulata) - NEW YORK - Adult emergence has been steady during past week in Monroe County. Still emerging from cages in Wayne County, but shows no trend toward a peak; only 2-3 adults per day. (N. Y. Wkly. Rpt., June 20).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - WASHINGTON - First adult of season recovered at Prosser, Benton County. This is latest record for past 12 years, due to cool weather. (Frick, June 17).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Infestations extremely heavy on pecans and persimmons throughout the State. (Spink).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Medium on walnuts in Kelseyville, Lake County. (Cal. Coop. Rpt.).

PECAN LEAF CASEBEARER (Acrobasis juglandis) - ALABAMA - Causing light damage to pecan foliage in Covington County. (Stephenson).

PECAN NUT CASEBEARER (Acrobasis caryae) - LOUISIANA - Infestations ranged light to heavy on pecans throughout State. (Spink). OKLAHOMA - Heavy infestations in pecan groves surveyed in Marshall and Stephens Counties; counts indicated up to 28 percent of clusters infested. Counts in a grove in Stillwater, Payne County, showed 14 percent of clusters infested. (Vinson, Gregory, Hatfield, Bieberdorf). NEW MEXICO - Infestations presently very light on pecans at Carlsbad, Eddy County; second generation now appearing. (N. M. Coop. Rpt.).

A TENT CATERPILLAR (Malacosoma sp.) - TEXAS - Light to medium infestations on pecans in Colorado and Guadalupe Counties. (McClung, Massey).

A LEAF ROLLER (Archips rosana) - OREGON - Adults on filberts continue to emerge; reported in greater numbers in the Willamette Valley than during 1959. (Capizzi).

PECAN LEAFROLL MITE (Aceria caryae) - NORTH CAROLINA - Infesting pecans in Wilson County. (Jones, Farrier). MISSOURI - Found in pecan groves in Dunklin and Pemiscot Counties. (Munson, Thomas, Wood).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - A moderately heavy infestation was found May 31 in Municipio Allende, Nuevo Leon; one tree had an estimated 90 percent or more of leaves infested. Infestation also found on pear trees nearby. Inspection also begun in city of Montemorelos, Nuevo Leon, not surveyed since 1957. Surveys continued in chemical and free zones of States of Nuevo Leon, Sonora and Baja California. A total of 44,583 citrus trees were inspected on 727 properties, with 308 trees found infested on 22 properties in Nuevo Leon. Surveys were negative at Gral. Terán, Nuevo Leon; Hermosillo, Sonora; and in the Tijuana district, Baja California. Citrus blackfly in the biological control zone of the State of Tamaulipas appears to be generally under control by parasites. There were no captures or liberations of parasites during May. (PPC, Mex. Reg.).

A BLUEBERRY THRIPS (Frankliniella vaccinii) - MAINE - Infestations appear more numerous in Washington County; numbers moderate with light to moderate damage. Considerable increase in 1960 over normal for the county. (Boulanger, June 17).

BLUNT-NOSED CRANBERRY LEAFHOPPER (Scleroracrus vaccinii) - NEW JERSEY - The carrier of false blossom disease of cranberries is now strong in all untreated cranberry bogs. (Ins.-Dis. Newsl., June 21).

#### TRUCK CROP INSECTS

HORNWORMS (Protoparce spp.) - COLORADO - Larvae average 4-6 per tomato plant in Mesa County. (Colo. Ins. Sur.). MISSOURI - Beginning to appear in damaging numbers in southeast area. (Wkly. Rpt. Fr. Gr.). ALABAMA - Heavy on tomatoes in area of Chilton County. (Helms).

TOMATO FRUITWORM (Heliothis zea) - GEORGIA - Heavy on tomatoes in Peach County, June 18. (Snapp).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Larvae present in potato vines. Control effective in treated fields. (Ins.-Dis. Newsl., June 21). DELAWARE - Larvae fairly common in potato vines in Kent County. First pupa of season found June 22. (Burbutis, Mason). MARYLAND - Mature larvae and some pupae in heavily infested potato vines in Somerset and Worcester Counties. (U. Md., Ent. Dept.).

SPIDER MITES - ALABAMA - Causing severe damage to tomatoes in Chilton County. (Helms).

THRIPS - DELAWARE - Rather heavy feeding injury on very small pepper plants in Sussex County. (Burbutis, Mason).

SPRINGTAILS - DELAWARE - Rather heavy feeding injury on very small pepper plants in Sussex County. (Burbutis, Mason).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - CONNECTICUT - Heavy in few fields of eggplant. (Minnum, June 21). NEW YORK - Larvae heavy on potatoes in Nassau County, feeding and laying eggs in Oneida County and adults and eggs present on tomatoes in Monroe County. (N. Y. Wkly. Rpt., June 20). WASHINGTON - Small and nearly mature larvae and old adults on potatoes and solanaceous weeds in Yakima area. Eggs light to moderate. (Landis, June 17).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Heavy with moderate damage in Aroostook County; moderate with heavy damage to potatoes, tomatoes and beans in Androscoggin and Sagadahoc Counties; heavy with moderate damage to potatoes and tomatoes in Cumberland County; and light with light damage in Orono area of Penobscot County. (Boulanger, June 17). Light to moderate with light to moderate damage on untreated potatoes in Presque Isle area. (Shands). CONNECTICUT - Moderately heavy on untreated fields of newly set tomato, pepper and eggplant. (Minnum, June 21). NEW YORK - Feeding heavily in Oneida County. (N. Y. Wkly. Rpt., June 20). WISCONSIN - Light on potatoes in Portage County area. Numerous in untreated potatoes in southeastern area. (Wis. Coop. Sur.).

PALE-STRIPED FLEA BEETLE (Systema blanda) - MISSOURI - Caused considerable damage to garden crops in Columbia area. (Wkly. Rpt. Fr. Gr.). DELAWARE - Adults fairly common on lima beans and potatoes in New Castle County, causing light feeding injury. (Burbutis, Mason).

FLEA BEETLES - NEW YORK - Active on tomatoes in Monroe County and numerous on most potato plantings in Erie County. (N. Y. Wkly. Rpt., June 20). MARYLAND - Eptitrix fuscata heavy on eggplant in gardens on Eastern Shore. (U. Md., Ent. Dept.).

APHIDS - CONNECTICUT - Building up in some fields of peppers, eggplant and tomatoes. (Minnum, June 21). NEW YORK - Heavy on tomatoes in some Monroe County fields. Macrosiphum solanifolii very light in Suffolk County potato fields. (N. Y. Wkly. Rpt., June 20). NEW JERSEY - Myzus persicae very light on potatoes. (Ins.-Dis. Newsl., June 21).

Potato Aphids in Maine - Although still very light, populations on untreated potatoes increased sharply during the week. Plots planted in Presque Isle area May 19-24 averaged 5.1 percent of plants infested, as compared with 1.8 percent a week ago. POTATO APHID (Macrosiphum solanifolii) predominates, followed by BUCKTHORN APHID (Aphis nasturtii) and FOXGLOVE APHID (Myzus solani). GREEN PEACH APHID (Myzus persicae) absent to date. (Shands).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults and nymphs present on beans and potatoes in several areas. (Burbutis, Mason). MARYLAND - Heavy on beans in home gardens on Eastern Shore. (U. Md., Ent. Dept.). PENNSYLVANIA - Present on potatoes in northwest area and averaged 1 adult per 10 sweeps in south central and southwest areas. (Pepper, Udine, Adams).

IMPORTED CABBAGEWORM (Pieris rapae) - MAINE - Light with light damage in Orono area of Penobscot County. (Boulanger, June 17). NEW YORK - Counts 4-5 per untreated broccoli and cabbage plant in Orange County and light on cabbage and cauliflower in Erie County. (N. Y. Wkly. Rpt., June 20). NEW JERSEY - Adults very numerous on June 16, flights continue to be heavy in central area. (Ins.-Dis. Newsl., June 21). MARYLAND - Larvae heavy on cabbage and adults abundant in all sections. (U. Md., Ent. Dept.). DELAWARE - Moderately heavy injury to horseradish. (Burbutis, Mason). WISCONSIN - Extremely light in southeastern area. (Wis. Coop. Sur.)

DIAMONDBACK MOTH (Plutella maculipennis) - WISCONSIN - Light in southeastern area. (Wis. Coop. Sur.). UTAH - Adults and larvae numerous on mustards in Cache County. (Knowlton).

HARLEQUIN BUG (Murgantia histrionica) - NEW MEXICO - Has been serious on cabbage and rutabaga near Lovington, Lea County; good control obtained recently. Damaging cabbage at Hondo, Lincoln County. (N. M. Coop. Rpt.).

MAGGOTS - WYOMING - Heavy on seed radishes in Powell area; averaged 12 per infested plant. (Fullerton).

A FLEA BEETLE (Phyllotreta cruciferae) - DELAWARE - Common, 4 adults per horse-radish plant, in Kent County. (Burbutis, Mason).

A SCARAB (Strigoderma arboricola) - DELAWARE - Very common in limited areas on beans in Kent and Sussex Counties; adults feeding on buds and flowers. (Burbutis, Mason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW YORK - Continues to build up on beans in Ulster County. (N. Y. Wkly. Rpt., June 20). PENNSYLVANIA - Adults depositing eggs on beans in south central area. (Pepper). MARYLAND - Very destructive to snap beans in gardens on Eastern Shore. (U. Md., Ent. Dept.). GEORGIA - Heavy on beans in Washington, Johnson, Emanuel, Candler, Jenkins and Burke Counties. (Johnson). ALABAMA - Causing moderate to heavy damage to beans throughout central and southern areas. (Grimes, Stephenson). COLORADO - Adults 1-4 per



10 plants in Larimer County. (Colo. Ins. Sur.). UTAH - Damaging beans in Salt Lake, Weber and Cache Counties. (Knowlton).

EUROPEAN EARWIG (Forficula auricularia) - NEVADA - Increasing in Reno-Sparks area and damaging seedling vegetables and flowers. (Bechtel). UTAH - Damaging beans and garden flowers at Logan and Smithfield. (Knowlton).

PEA APHID (Macrosiphum pisi) - NEW JERSEY - Mosaic virus of peas seems to be particularly severe this year even though infestations not unusually heavy. (Ins.-Dis. Newsl., June 21). WISCONSIN - Migrations continue heavy in treated and untreated peas; June 21, alate forms, 2 per sweep, again infesting peas treated four days earlier. In untreated 8-inch peas, averaged over 50 per sweep, and in 10-inch peas colonies 6 per 10 plants. Most colonies had about 10 aphids, but some as high as 27. Migration will probably continue along with the extensive cutting of alfalfa. (Wis. Coop. Sur.). UTAH - Common in northern area pea fields but not in damaging numbers. (Knowlton). IDAHO - Extremely light throughout State, but beginning to build up in some fields in Nez Perce County. (Manis).

ALFALFA LOOPER (Autographa californica) - IDAHO - Larvae ranging from first instar to full grown becoming abundant and damaging pea foliage in Tom Bell area of Nez Perce County. Average better than 2 per sweep. Controls being applied. (Nielsen).

PEA WEEVIL (Bruchus pisorum) - IDAHO - Averaging less than one per 25 sweeps in pea fields just beginning to bloom in Lewis County. (Manis). Infesting garden peas in Parma area; 70-90 percent of peas within pods attacked. (Roberts).

WHITE-LINED SPHINX (Celerio lineata) - NEVADA - Light to medium on peas in Orovada, Humboldt County. (Galloway, Hilbig).

ONION THRIPS (Thrips tabaci) - COLORADO - Counts 5-25 per onion plant in Arkansas River Valley. (Colo. Ins. Sur.). IDAHO - Becoming abundant in onion seed fields in southwestern area, necessitating control measures. Seed heads just commenced to open and thrips averaging better than 5 per head. (Manis). NEVADA - Averaged 5-10 per garlic plant in Smith Valley, Lyon County. (Parker). OREGON - A thrips, probably T. tabaci, damaging garlic in Willamette Valley. (Every).

ONION MAGGOT (Hylemya antiqua) - NEW YORK - Damage from first generation about over. Considerable injury noted in large acreage in Wayne County and scattered in Oswego County past 2 weeks; Orange County notably free. Damage very light in Madison County and infestation just appearing in Erie County. (N. Y. Wkly. Rpt., June 20). WISCONSIN - Very active on untreated onions in southeastern area and now entering pupal stage. (Wis. Coop. Sur.). MONTANA - Infestations scattered west of Continental Divide, June 1-15. (Roemhild). OREGON - Infestations appear below normal in Labish area of Marion County. (Capizzi).

A NEMATODE (Ditylenchus dipsaci) - NEVADA - Infesting garlic in Dayton, Lyon County, and Washoe Valley. Det. by E. C. Jorgensen. (Galloway).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - MAINE - Moderate to heavy damage to cucurbits in Androscoggin and Sagadahoc Counties. (Boulanger, June 17). CONNECTICUT - Building up in untreated fields. (Minnum, June 21). NEW YORK - Very active on cucumbers. (N. Y. Wkly. Rpt., June 20). DELAWARE - Present in most cucumber fields throughout State but remains below damaging proportion. (Burbutis, Mason). INDIANA - General in melons, cucumbers and squash. (Gould). MISSOURI - Continues to be troublesome in southeast area. (Wkly. Rpt. Fr. Gr.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - CONNECTICUT - Building up in untreated fields. (Minnum, June 21).

SQUASH BUG (Anasa tristis) - UTAH - Damaging in areas of Washington and Cache Counties. (Knowlton).

BEEET WEBWORM (Loxostege sticticalis) - COLORADO - Larvae 1-5 per 10 sugar beet plants in Larimer County; 4-6 per 10 plants in Mesa, Delta and Montrose Counties. One per 10 plants in Otero County. (Colo. Ins. Sur.). UTAH - Common, but no larval damage reported. (Knowlton). WYOMING - Larvae averaged 1 per 100 plants in samples taken in 20 sugar beet fields in Big Horn Basin; averaged less than 1 per 100 plants in Fremont County. (Fullerton).

BEEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Ranged 4-6 per 100 sweeps in Mesa, Delta and Montrose Counties. Curly top disease incidence 3-4 percent in Mesa County. (Colo. Ins. Sur.).

SAY STINK BUG (Chlorochroa sayi) - TEXAS - Heavy on sugar beets where control not applied in Deaf Smith County. (Thomas).

LYGUS BUGS (Lygus spp.) - IDAHO - Populations, mostly L. elisus and L. hesperus, heavy in carrot seed fields in Melba area. In one field, half of population consisted of immatures from second instar on. Averaged 1-2 per umbel. (Scott, Roberts).

A LEAF-FOOTED BUG (Leptoglossus sp., prob. zonatus) - CALIFORNIA - Medium infestation on asparagus in Escondido, San Diego County. (Cal. Coop. Rpt.).

ASPARAGUS BEETLES (Crioceris spp.) - CONNECTICUT - C. asparagi and C. duodecimpunctata common and heavy, respectively, in all asparagus plantings. Eggs easily found on spears. (Minnum, June 21).

CARROT WEEVIL (Listronotus oregonensis) - NEW JERSEY - Infesting celery on muck soil in Warren County. (Ins.-Dis. Newsl., June 21).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - NEW YORK - Rapidly building up on lettuce in Erie County. (N. Y. Wkly. Rpt., June 20). WISCONSIN - Earlier intensive surveys indicated northward migration of southern populations was lightest in over a decade. Currently light. (Wis. Coop. Sur.).

SLUGS - NORTH DAKOTA - Severe injury to home gardens at Fargo. (N. D. Ins. Sur.).

A MINT LOOPER (Rachiplusia ou) - INDIANA - Scarce on peppermint and spearmint on Jasper and Starke Counties. (Gould).

CUTWORMS - OREGON - First cutworms of season, probably Agrotis ipsilon, on mint at Talbot, June 24. (Morrison).

SUCKFLY (Cyrtopeltis minimus) - TEXAS - Heavy in localized areas in La Salle County. (Garner).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Medium to heavy on hop plantings locally in Sacramento County. (Cal. Coop. Rpt.).

CYCLAMEN MITE (Steneotarsonemus pallidus) - NEW YORK - Heavy buildup on strawberries June 13 in Tompkins County; appearing in Wayne County and caused injury in Oswego County plantings which were free of infestation earlier in spring. (N. Y. Wkly. Rpt., June 20). MINNESOTA - Present on strawberries in Twin City and areas to the north. (Minn. Ins. Rpt.).

STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) - MONTANA - Damaged strawberries in Plentywood. (Roemhild, June 1-15). ALABAMA - Moderate on strawberries locally in Conecuh County. (Lemons). MINNESOTA - Present on strawberries in various areas of State. (Minn. Ins. Rpt.).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - UTAH - Damaging strawberry patches locally in Salt Lake County. (Knowlton).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - WISCONSIN - Nymphs light to moderate in strawberries in Door County. (Wis. Coop. Sur.).

GRASSHOPPERS - INDIANA - Newly hatched nymphs becoming abundant in most strawberry patches in Orleans area. (Marshall, June 21).

CURRANT SPANWORM (Itame ribearia) - MINNESOTA - Defoliating strawberry plants in Backus area. (Minn. Ins. Rpt.).

RASPBERRY CANE BORER (Oberea bimaculata) - INDIANA - Adults very abundant on raspberries. (Chandler).

RED-NECKED CANE BORER (Agrilus ruficollis) - INDIANA - Adults very abundant on raspberries. (Chandler).

#### TOBACCO INSECTS

BLACK CUTWORM (Agrotis ipsilon) - MARYLAND - Serious outbreak on tobacco generally. (U. Md., Ent. Dept.). OHIO - Serious on tobacco in Darke County. (Blair, Holdsworth, Kuester).

TOBACCO BUDWORM (Heliothis virescens) - GEORGIA - Moderate to heavy on tobacco in Emanuel, Candler and Jenkins Counties. (Johnson).

TOBACCO MOTH (Ephestia elutella) - NORTH CAROLINA - Summer flight has begun in tobacco warehouses in the past 2 weeks in Forsyth County. (Wright).

THRIPS - MARYLAND - Common on newly set tobacco plants in southern area. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - First-brood adults beginning to increase on tobacco in Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

CIGARETTE BEETLE (Lasioderma serricorne) - NORTH CAROLINA - Adults light in tobacco warehouses in Forsyth County. (Wright).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Activity increased markedly in Scotland, Anson, Hoke, Richmond, Wilson, Wayne, Northampton and Edgecombe Counties. Infestations in early, untreated fields ranged 10-75 percent. Activity expected to increase in Upper Coastal and Piedmont areas during week. (Cott. News Lett.). SOUTH CAROLINA - Slightly fewer overwintering weevils still emerging from hibernation in Florence area. Some first-generation weevils observed. Untreated fields heavily infested. Larval infestation counts in treated fields ranged 0-37.3 and 1.6-55.3 in untreated fields. (Taft, Jernigan, Hopkins). GEORGIA - Square counts made in 15 southern cotton fields, with range of 0-22 percent punctured squares, averaging 7. (Johnson). ALABAMA - Infestations generally increasing in untreated cotton in central and southern areas. Square infestation counts ranged 0-50 percent. First-generation weevils expected to emerge in next few days. (Grimes). TENNESSEE - Becoming active in western area. Infestations confined to southern tier of counties. Populations heavy enough to cause considerable damage if weather is favorable. Some treatments already applied. (Locke). ARKANSAS - In northeast, weevils present in 35 of 880 fields checked, with average percent punctured squares only 0.09. In southeast, overwintering weevils continue to emerge, being present in 219 of fields scouted; however, only 1.3 percent of squares punctured. In upper Arkansas River Valley in southwest area, emergence of overwintering weevils heavy in presquaring cotton. (Ark. Ins. Sur.). MISSISSIPPI - Weevils hard to find in delta counties

due to increased size and fruiting of cotton and smaller numbers of weevils. Flared squares evident in former hot spots in older cotton. Light emergence of first-generation weevils anticipated. Range of punctured squares was 0-23 percent, with average infestation 1.8 percent. (Merkl et al.). LOUISIANA - Light to medium infestations in East Feliciana and East Carroll Parishes. Square infestation averaged 10 percent in field of old cotton and adults averaged 4 per 100 feet of row in field of young cotton in Tensas Parish. Infestations ranged 1-2 percent in 4 fields of young cotton in Rapides Parish and 50 percent in field of blooming cotton in Acadia Parish, with all other infestations ranging 1-2 percent in Acadia Parish. (Spink). OKLAHOMA - Becoming more common in cotton throughout State. Heaviest populations in Marshall County where counts ranged 2-15 per 100 stalks. Light in other fields checked. (Okla. Coop. Sur.). TEXAS - First-generation weevils appearing in northeastern area. (Gaines). Infestations averaged 27.6 percent punctured squares in untreated fields and 9.7 percent in treated fields in McLennan and Falls Counties, with overall average 12.3 percent. (Parencia et al.).

BOLLWORMS (*Heliothis* spp., et al.) - GEORGIA - Egg counts ranged 18-500 per 100 terminals in cotton, averaging about 90. Larval counts ranged 2-75 per 100 terminals, averaging about 21. (Johnson). ALABAMA - Infestations continue to be major concern in most areas of State; however, actual numbers per 100 terminals slightly less than recorded previous week. Eggs plentiful and many almost ready to hatch. (Grimes). MISSISSIPPI - Egg deposition on cotton increased markedly over delta counties but no general damage noted. Egg counts range 0-27 per 100 terminals. Small larvae light in some fields but no heavy populations reported. (Merkl et al.). LOUISIANA - Eggs heavy and larvae medium in East Carroll Parish. Light to medium infestations of eggs and larvae reported from Morehouse Parish. Square damage in field in Tensas Parish estimated at 15 percent and cotton being treated. In Acadia Parish, eggs averaged 20 per terminal in cotton, and eggs averaged 275 per 100 terminals in field in Tangipahoa Parish. (Spink). ARKANSAS - Activity light in northeast, southeast and upper Arkansas River Valley in southwest. (Ark. Ins. Sur.). OKLAHOMA - None to light numbers of larvae in most cotton surveyed throughout State. Counts heaviest in Marshall and Johnston Counties where larval counts ran up to 5 per 100 stalks in some fields and egg counts ran as high as 12 per 100 stalks in others. (Hatfield, Presgrove, Hudson, Vinson, Goin, Robinson, Stiles). TEXAS - Activity increased in many areas. (Gaines). In McLennan and Falls Counties, eggs averaged 0.7 and larvae 0.8 per 100 terminals. (Parencia et al.). ARIZONA - Infestations low in cotton statewide. (Ariz. Coop. Sur.).

FLEAHOPPERS - ARIZONA - Mixed populations of Spanogonicus albofasciatus and Psallus seriatus average 10-40 per 100 sweeps in southeast and 5-20 per 100 sweeps in central and southwest areas on cotton. (Ariz. Coop. Sur.). NEW MEXICO - P. seriatus appears to be building up in cotton in Chaves and Eddy Counties. A Black Fleahopper averaged about 2 per 100 sweeps in cotton in Eddy and Chaves Counties. (N. M. Coop. Rpt.). OKLAHOMA - Light to heavy populations of P. seriatus, 0.8-40 per linear foot and up to 1.25 per stalk, reported in cotton checked in counties along Red River in southwest and south central areas. None to light noted in cotton checked in east central area. (Hatfield, Presgrove, Hudson, Vinson, Robinson). TEXAS - Infestations continue to build up in sections of central, northeast and north central areas, with some movement into older cotton plantings noted in south plains area. (Gaines).

THRIPS - TEXAS - Heavy infestations continue in sections of northwest, north plains and south plains areas. (Gaines). OKLAHOMA - Light infestations in most cotton surveyed in State. (Okla. Coop. Sur.). MISSOURI - Counts on late-planted cotton ranged 2-5 per plant; scattered fields show signs of severe injury. (Munson, Thomas, Wood). TENNESSEE - Cotton practically out of thrip damage stage in western area. (Locke).

**STALK BORER (Papaipema nebris)** - NORTH CAROLINA - Infesting cotton in Johnston County. (Jones, Farrier). **TENNESSEE** - Causing some damage to cotton along outer edges of fields in western area. (Locke). **MISSOURI** - Commonly found in margins of cotton throughout cotton-growing area. Damage to 0.5-5 percent of plants in marginal rows observed. (Munson, Thomas, Wood). **MISSISSIPPI** - Light infestation in a small field of cotton at Aberdeen. (Bibby, Breland).

**CABBAGE LOOPER (Trichoplusia ni)** - OKLAHOMA - Common in all cotton surveyed in east central area where counts ranged 1-4 per 250 feet of row. None reported in fields checked in other areas surveyed except for a light infestation in field in Tillman County. (Robinson, Hatfield, Presgrove, Hudson, Vinson, Goin, Stiles).

**A GEOMETRID - TENNESSEE** - Found in several cotton fields in western area; causing damage to underside of leaf. This is first time this insect was found in such large numbers. (Locke).

**PINK BOLLWORM (Pectinophora gossypiella)** - ARIZONA - Two moths emerged from surface material in cage tests at Safford, Graham County, June 20. (Ariz. Coop. Sur.). **LOUISIANA** - Bloom inspections negative to June 23. (PPC). **MEXICO** - In State of Tamaulipas, blooms inspected in 312 locations, with 143 found infested. Average population in all of the infested area was 21 larvae per acre, while the heaviest was 670 per acre. Only 3 fields heavy enough to warrant controls. Bloom inspection indicates population to be more generally distributed this year than in 1959 and apparently more numerous in the Matamoros district. Inspection of 100 squares in a field at Torreón, Coahuila, revealed an 11 percent infestation. Bloom inspections at one location in Nuevo Leon and at Guasave and Los Mochis, Sinaloa, were negative. (PPC, Mex. Reg., May Rpt.).

**YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli)** - OKLAHOMA - Light, 2-3 per 250 feet of row, in 2 cotton fields in Wagoner and Muskogee Counties. (Robinson).

**COTTON LEAF PERFORATOR (Bucculatrix thurberiella)** - ARIZONA - Light populations present in some cotton fields in Stanfield area of Pinal County. (Ariz. Coop. Sur.).

**LYGUS BUGS (Lygus spp.)** - ARIZONA - Infestations of adults continuing to build up in cotton over State. Counts per 100 sweeps in different areas were: 20-40 in Maricopa, Pinal and Pima Counties; 10 in Yuma County; 12-18 in Graham and Greenlee Counties; and 3-10 in Cochise County. (Ariz. Coop. Sur.). **MISSISSIPPI** - Infestations of L. lineolaris very erratic in delta counties; counts range 0-39 per 100 sweeps. Damage to early squares common in some fields adjoining pastures, hay fields, etc. Treatments generally effective for reducing populations and reducing damage in treated fields. (Merkl et al.).

**MITES - GEORGIA** - Light to moderate infestation in southwest area cotton (Maxwell) and light in Emanuel, Jenkins and Burke Counties (Johnson). **MISSISSIPPI** - Localized, light infestations present in delta counties. (Merkl et al.). **TENNESSEE** - Increasing in cotton in western area. (Locke). **MISSOURI** - Tetranychus atlanticus commonly appearing in margins of cotton fields in Dunklin, Pemiscot and New Madrid Counties. (Munson, Thomas, Wood). **NEW MEXICO** - Occasional, spotty infestation of unspecified species present in Eddy and Chaves Counties. (N. M. Coop. Rpt.). **ARIZONA** - Light to medium populations of T. cinnabarinus present and increasing in some central cotton fields. (Ariz. Coop. Sur.).

**COTTON APHID (Aphis gossypii)** - GEORGIA - Light to moderate infestations in southwest fields (Maxwell) and light in Emanuel, Jenkins and Burke Counties (Johnson). **ALABAMA** - Light infestation reported from Lauderdale County. (Fowler). **OKLAHOMA** - None to light in all cotton surveyed in State. (Okla. Coop. Sur.).

**FLY BEETLES (Systema spp.)** - ARIZONA - Adults damaging bracts of squares in some Yuma Valley cotton fields in Yuma County. Counts average 2 per 10 sweeps. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WASHINGTON - Infestations discovered in 2 nurseries and one home planting of pine at Spokane. (Furniss, June 17). NEW YORK - Adults flying in Monroe County June 16, although many pupae and one larva were found. (N. Y. Wkly. Rpt., June 20).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - INDIANA - Light on Scotch and red pines in southern area of State. (Schuder).

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Pupating in Jackson County and in mid-larval instars in Polk, Burnett, Washburn, Douglas and Bayfield Counties. Infestations generally light in west central area, but have resulted in 60 percent defoliation over rather extensive portions of northwest; also feeding on red pine in latter area. (Wis. Coop. Sur.). MINNESOTA - Fourth instar present at Biwabik and Central Lakes; some smaller instars still in staminate flowers. Beating sample on 4 x 8-foot sheet averaged 52 per sample for 3 trees. (Minn. Ins. Rpt.).

SPRUCE BUDWORM (Choristoneura fumiferana) - MAINE - Light infestation and damage reported from Lewiston, Androscoggin County. (Boulanger, June 17). MINNESOTA - Few moths emerging in Koochiching County; most larvae in sixth instar and pupal stage. (Minn. Ins. Rpt.). MONTANA - Feeding was obvious during 1959 in Douglas-fir foliage within White Sulphur Springs, Judith and Belt Creek districts of Lewis and Clark National Forest (Tunnock); third and fourth instars present on ornamental spruce in Bozeman. (Roemhild, June 1-15).

SPRUCE NEEDLE MINER (Taniya albolineana) - MONTANA - Infesting ornamental spruce in Gardiner. (Roemhild, June 1-15).

JUNIPER WEBWORM (Dichromeris marginella) - MASSACHUSETTS - Moths flying, but many larvae in webs have not yet pupated; moth emergence and egg laying will cover several weeks. (Wheeler, June 21).

BARK BEETLES - MONTANA - Dendroctonus monticolae active in young, pole-sized, ponderosa pine stands on Lewis and Clark National Forest. It is estimated that D. engelmanni infested 500 acres of Engelmann spruce during 1959 on North Fork of Waldon Creek, Lewis and Clark National Forest. (Tunnock, June 1-15). CALIFORNIA - First evidence of D. brevicomis attack this year in Big Creek multiple-use demonstration area; about 30 old-growth ponderosa pines have been killed in a group and fades appearing on a 6,000-acre area. (C. Sikora). D. brevicomis and D. monticolae killing ponderosa pines of mixed ages in groups up to 200 in Briles Reservoir area, Modoc County. This is first report for 1960 in this area. (G. R. Davies). D. brevicomis and D. monticolae causing fades in young sawtimber and old growth in Bass Lake district of Sierra National Forest. An estimated 150 ponderosa and sugar pines are currently affected below 6,000-foot level. Considerable control work was done in this area this spring. (L. E. Ballew). WISCONSIN - Heavy infestations of Dendroctonus spp. and Ips spp. in stumps of a cutting area in Douglas County reported. Mating adults, eggs and early instar larvae observed June 11-18. (Wis. Coop. Sur.).

A PINE REPRODUCTION WEEVIL (Cylindrocopturus furnissi) - OREGON - Infesting a nursery planting of spruce in Portland; mature larvae in twigs June 19. (Hemmerling).

WHITE-PINE WEEVIL (Pissodes strobi) - WISCONSIN - Middle and late-instar larvae present in Burnett, Juneau and Sauk Counties during period June 11-18. Current infestations in jack and white pine range 10-15 percent, compared with as much as 95 percent during 1959. (Wis. Coop. Sur.). PENNSYLVANIA - Ten percent of white pine and 2 percent of Scotch pine infested in a 5-acre mixed planting in Clarion County. (Adams).

APHIDS - MONTANA - Chermes cooleyi remains active on ornamental spruce in Missoula, Bozeman and Great Falls areas. (Tunnock, Roemhild; June 1-15). OREGON - Very light populations of C. cooleyi on Douglas-fir trees in Keiser area, Marion County. (Bell). CALIFORNIA - Heavy populations of Cinara curvipes occurring on fir in Corralitos, Santa Cruz County. (Cal. Coop. Rpt.).

PINE SCALES - CALIFORNIA - Phenacaspis pinifoliae and Aspidiotus californicus causing severe damage to thousands of ponderosa and sugar pines in Greenhorn area of Klamath National Forest, Siskiyou County. (N. E. Dirksen).

PINE SPITTLEBUG (Aphrophora parallela) - PENNSYLVANIA - Counts of up to 200 per 7-foot Scotch pine tree in Venango County; averaged 10 per tree. Quite abundant generally in southwest part of State; some of 1959 adult feeding in evidence. Beginning to be a problem in plantations in this part of State. (Udine).

PINE SAWFLIES (Neodiprion spp.) - WISCONSIN - Feeding activity of N. nanulus has ceased in all reporting areas; cocoons present in Columbia County June 5-11. N. swainei still in egg stage in Columbia County, with one ovipositing adult collected as late as June 21. (Wis. Coop. Sur.). OKLAHOMA - Light infestation of N. lecontei found June 8 in an arboretum and in a nearby shortleaf pine plantation in McCurtain County. (Bredernitz). CALIFORNIA - Neodiprion sp. defoliating young planted ponderosa pines in Shasta-Brushfield plantation. (N. Dole).

SPIDER MITES - INDIANA - Oligonychus ununguis heavy on juniper and spruce throughout State. (Schuder). NEVADA - Tetranychus spp. heavy on ornamental evergreens in Reno, Washoe County. (Bechtel).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Heavy infestations on various trees throughout eastern portion of State. (Hawkins). NEW MEXICO - Larvae emerging; infestations present on willow, poplar, mulberry and occasionally on pecan in southern counties. (N. M. Coop. Rpt.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MAINE - Infestations and damage heavy on trees and shrubs in various locales in central Aroostook County. (Boulanger, June 17). MINNESOTA - None found in Cloquet and Alborn area, which was heavily infested during 1959. (Minn. Ins. Rpt.). UTAH - Damage less severe to date in northern portion of State than during 1958 and 1959. (Knowlton).

GYPSY MOTH (Porthetria dispar) - Initial hatching of egg masses was observed as follows: Salisbury, Vermont, and Saratoga County, New York - May 3; Otsego and Morris, New York - May 4; Hinesburg, Vermont - May 5; Rochester and Nashua, New Hampshire - May 6; Newbury, Vermont, Merrimac and Meredith, New Hampshire, and Waterville, Maine - May 9; Walpole, New Hampshire - May 10; also in Maine, South Paris and Dexter, on May 12, and at Skowhegan on May 13. (PPC, East. Reg.).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - ALABAMA - Heavy infestation in Chilton County causing severe defoliation. (Grimes).

CANKERWORMS - MONTANA - Paleacrita vernata and Alsophila pometaria causing severe defoliation of Chinese elm in shelterbelts and native boxelder in Wibaux County. (Roemhild, June 1-15).

ELM SPANWORM (Ennomus subsignarius) - NORTH CAROLINA - Egg masses found June 16 in Clay County. (Stephen). Adult spring flight started in Cherokee County on June 22. (Green).

ELM LEAF BEETLE (Galerucella xanthomelaena) - MASSACHUSETTS - Skeletonizing and leaf curling readily visible on infested trees. Larvae growing fast. (Wheeler, June 21). MARYLAND - Larvae abundant and destructive to unsprayed elm foliage at Chestertown, Kent County. (U. Md., Ent. Dept.). ALABAMA - Caused considerable damage to elms throughout central section of State during past weeks. Severe damage to young trees observed in Calhoun County. (Grimes). OHIO - Severely

injured elm leaves in Columbus. (Holdsworth). INDIANA - Control measures being applied in Kokomo area of Howard County where larvae are damaging foliage of American elm. (Chandler). OKLAHOMA - Damage to elm foliage continues to cause concern to property owners in communities throughout most of eastern two-thirds of State. (Okla. Coop. Rpt.). IDAHO - Fairly large numbers appearing on elms in Twin Falls. (Evans). UTAH - Damaging a few trees at Ogden. Damage common in Salt Lake County; infestation largely adults and very young larvae. (Knowlton).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MISSOURI - Recovered from stump of recently cut American elm in Sedalia June 19. Tree had died but no diagnosis was obtained as to cause. (Wkly. Rpt. Fr. Gr.). WISCONSIN - Through June 22, a total of 257 confirmed cases of Dutch elm disease have been diagnosed from 34 municipalities in 8 counties. The number of cases has risen sharply above that of preceding week, and future increases are expected as beetle continues to emerge. (Wis. Coop. Sur.).

MAPLE CALLUS BORER (Sylvora acerni) - INDIANA - Emergence first noted June 19 in Lafayette area; much less numerous than in preceding years. Local decline may be due to depredations by Aphaenogaster tennesseensis upon exposed pupae and newly emerged adults. (Matthew).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - MARYLAND - Adults feeding on young oaks at Pittsville, Wicomico County. (U. Md., Ent. Dept.).

CALIFORNIA PRIONUS (Prionus californicus) - NEW MEXICO - Emerging from willows and Chinese elms throughout State. Adults a nuisance around large lights in business areas. (N. M. Coop. Rpt.).

A COTTONWOOD LEAF BEETLE (Chrysomela scripta complex) - ALABAMA - Heavy infestation in Mobile County causing severe defoliation of willows. (Wallace, Lockhart, Seibels).

LOCUST LEAF MINER (Chalepus dorsalis) - INDIANA - Becoming quite active on black locust in southwestern area. (Schuder).

NORWAY-MAPLE APHID (Periphyllus lyropictus) - IDAHO - Infesting maples in Parma area, Canyon County; unsprayed maples beginning to drip honeydew. (Scott).

A LACE BUG - OKLAHOMA - Heavy infestations of an unspecified species noted on some sycamores checked in Stillwater area, Payne County. (Bieberdorf).

SCALE INSECTS - WASHINGTON - American elms being severely damaged by Gossyparia spuria at Pullman. (Telford). KANSAS - Crawlers of G. spuria active in Logan County. (Gates). INDIANA - Lecanium fletcheri completed hatching in all but northern tier of counties. (Schuder). MAINE - Heavy infestations of Lepidosaphes ulmi causing moderate damage to lilacs in Auburn area, Androscoggin County. (Boulanger, June 17).

A CICADA (Okanagana sp.) - UTAH - Damaged many young fruit and shade trees in recently developed housing areas south and east of Salt Lake City. Some twigs breaking off due to egg-laying injuries. Cicadas also numerous in many parts of State. (Knowlton).

BIRCH LEAF MINER (Fenusa pusilla) - MAINE - Infestations and damage light to moderate on white and gray birch in the State. (Boulanger, June 17). DELAWARE - Many miners in birch foliage in New Castle County; most are mature, but a few are still small. (Burbutis, Mason).

MAPLE BLADDER-GALL MITE (Vasates quadripedes) - MAINE - Moderate infestation and damage reported on maple from Fort Fairfield area, Aroostook County. (Boulanger, June 17).



BAGWORM (Thyridopteryx ephemeriformis) - DELAWARE - Common on mimosa in Kent and Sussex Counties, and on pine, dogwood and sycamore in New Castle County. (Burbutis, Mason). MARYLAND - Injuring spruce at Hagerstown and cherry laurel at Pittsville. (U. Md., Ent. Dept.). INDIANA - Heavy on white pine plantings around homes in Perry County. (Schuder). LOUISIANA - Sporadic infestations noted on pyracantha in the New Orleans area. (Spink). TEXAS - Heavy populations on evergreens in Washington County. (McClung).

DOGWOOD BORER (Thamnospechia scitula) - PENNSYLVANIA - Quite serious in a fairly large dogwood planting in Westmoreland County. (Udine).

MIMOSA WEBWORM (Homadaula albizziae) - ALABAMA - Light infestations present in Montgomery County. (Owen). INDIANA - Larvae beginning to web foliage of honeylocust in Lafayette area. (Schuder). MARYLAND - Small larvae webbing leaves of mimosa and honeylocust in central and southern sections. (U. Md., Ent. Dept.). DELAWARE - Early instar larvae on mimosa trees in Kent and Sussex Counties. (Burbutis, Mason).

SATIN MOTH (Stilpnotia salicis) - NEW YORK - Defoliated 2 poplar trees in Carlisle, Schoharie County; about a third of population has pupated and all larvae are full grown. This species is not common in the State but was reported near Albany in 1944. (N. Y. Wkly. Rpt., June 20).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - NORTH CAROLINA - Cutting flowers and feeding on leaves of petunias, zinnias, azaleas and gardenias in Wake County. (Jones, Farrier).

ROSE CURCULIO (Rhynchites bicolor) - MONTANA - Adults active and numerous in Havre, Hill County. (Roemhild, June 1-15). UTAH - Numerous on wild roses at Morgan, Morgan County, and Coalville and Park City in Summit County. Damaging cultivated roses in various northern communities. (Knowlton).

ROSE APHID (Macrosiphum rosae) - IDAHO - Appearing in Parma area, Canyon County; generally only one stem mother per growing shoot, with few small colonies present. (Scott).

LEAFHOPPERS - NEW JERSEY - Unspecified species causing severe bleaching out between veins of dogwood leaves; also numerous on maples. (Ins.-Dis. Newsl., June 21). MARYLAND - Unspecified species injuring dogwood foliage at Laurel, Prince Georges County. (U. Md., Ent. Dept.).

#### INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - CONNECTICUT - Collected from faces of cattle, outside barns and in fresh cow dung in fields in several towns. Det. by C. W. Sabrosky. This is a first record of the species in this State. (Brigham, June 15). VIRGINIA - Infestations have been reported for the past 2 weeks from many southwest counties. Causing considerable concern to beef cattlemen in western and southwestern areas of the State. (Rowell). TENNESSEE - Found in Johnson County, being the first report of the species in the State. Averaged 7-10 per animal. (Bennett). OHIO - As of June 23, light infestations present in Columbus area; none present in northern part of State. (Holdsworth). INDIANA - Populations averaging 3-5 per animal observed in Noble, Elkhart and Kosciusko Counties. (Matthew). ILLINOIS - Populations in northern half of State average 1 per animal, range 0-5. (Ill. Ins. Rpt.).

HOUSE FLY (Musca domestica) - OHIO - Numerous around barns in Columbus; light populations present in northern area of State. (Holdsworth).

HORN FLY (Siphona irritans) - OHIO - Present in moderate to large numbers statewide and annoying cattle. (Holdsworth). INDIANA - Counts averaged 250 per beef animal on pasture in Dubois County (Dobson); ranged 50-160 per animal in Noble, Elkhart and Kosciusko Counties (Matthew). ILLINOIS - Averaged 50 per animal, with range of 5-150. (Ill. Ins. Rpt.). NEBRASKA - Numbers increasing; one herd of Herefords in Blaine County and one in Polk County averaged 200 per head. (Simpson). KANSAS - Counts on yearling heifers in Riley County, that were sprayed June 1, are now up to 100 per head. (Knapp). OKLAHOMA - Populations varied from 75 per animal in a herd checked in Marshall County to 150-500 per animal in herds surveyed in north central area. (Vinson, Young, VanCleave).

TABANIDS - IDAHO - Adults of Chrysops noctifera pertinax moderately annoying in wetter areas near Cocolalla, Bonner County. Deer fly populations in northern part of State appear considerably below those of 1959. (Foote). UTAH - Tabanus spp. and Chrysops spp. troublesome in meadow areas of Duchesne-Myton area, Duchesne County; also in sections of Tooele and Rich Counties, especially in larger meadow areas. Causing some annoyance to campers in Mt. Timpanogos Loop-American Fork Canyon area, Utah County. (Knowlton). OKLAHOMA - Light to medium numbers of Tabanus spp. noted on animals in wooded areas along creeks and rivers in north central area. (Young, VanCleave). KANSAS - Light numbers, tentatively identified as Tabanus atratus, flying around livestock in Riley County. (Knapp). WISCONSIN - Horse flies and deer flies have become more noticeable, affecting outdoor evening activity in many northern locations of the State. (Wis. Coop. Sur.). INDIANA - A few Tabanus spp. appeared on beef animals on pasture in Dubois County. (Dobson). MAINE - A large, unidentified species, heavier in numbers than normal in many sections of the State. (Boulanger, June 17).

BLACK FLIES (Simulium spp.) - No abatement to June 17. (Boulanger). MONTANA - S. arcticum heavily infesting and tormenting cows near Sunburst, Toole County. (Roemhild, June 1-15). OREGON - Simulium sp. biting chickens in one flock in Malheur County, with some birds killed. (Every).

SCREW-WORM (Callitroga hominivorax) - OKLAHOMA - One animal found infested in a herd of 40 cattle checked in Ft. Cobb area, Caddo County. Det. by F. E. Henderson. (Hansen).

MOSQUITOES - CALIFORNIA - Populations of Culex tarsalis and other species fluctuated without very much overall change. Locations with higher populations show some decrease, while there was a slight overall rise in most areas. (Vect. Cont.). IDAHO - Aedes fitchii and Aedes spp. are abundant and biting viciously in wetter areas near Worley (Kootenai County) and Cocolalla (Bonner County). (Foote). UTAH - Various species troublesome along rivers and about various communities in Uintah Basin. Moderately numerous in meadow area of Piute County and in Helper-Price area of Carbon County. (Knowlton). TEXAS - Various species very abundant on range and in soil bank fields causing annoyance to livestock and field personnel in Castro, Parmer, Swisher, Randall, Potter and Oldham Counties. (Russell). OKLAHOMA - Psorophora spp., Aedes spp. and Culex spp. causing concern in some areas of eastern half of State. (Howell). SOUTH DAKOTA - Several reports received from Brookings area, Brookings County, concerning unspecified species. (Mast). MINNESOTA - A total of 356 larval collections made June 12-18 showed a marked reduction in number of species found. Aedes vexans and Culiseta inornata were predominant, with only 5 other species present. Light trap collections are declining; A. vexans generally accounts for 95 percent or more of collections. (Minn. Ins. Rpt.). WISCONSIN - Very high populations of various species have become annoying during evening hours in many northern localities. Populations apparently low at present in Madison area. Observations on 192 dairy herds throughout State indicated mosquitoes are more of a problem than flies. Reports on 110 herds indicated mosquitoes were interfering with night grazing. (Wis. Coop. Sur.). DELAWARE - Second brood of Aedes sollicitans has emerged. (Darsie). VERMONT - Populations of various species reported to be worst in 8 years in Bennington County. (MacCollom, June 20). MAINE - Various species, principally Aedes spp., down from high level of past 2 weeks. (Boulanger, June 17).

TICKS - SOUTH DAKOTA - Dermacentor variabilis abundant in eastern part of State. (Mast). OKLAHOMA - D. variabilis remains numerous in localized favorable areas in eastern half of State. (Howell). Counts of various species ranged 0-10 per animal on calves; averaged 10 per cow and 15 per bull in a herd of 88 cattle checked in Marshall County. (Vinson).

A BROWN SPIDER (Loxosceles reclusa) - KANSAS - A few specimens have been brought in, but many less than during 1959; probably because people are becoming accustomed to them. Only 2 cases of bite have been reported during 1960 in Manhattan; may also be due to fact that physicians have become accustomed to them. (Knutson).

#### BENEFICIAL INSECTS

LADY BEETLES - OKLAHOMA - Hippodamia convergens common, but varied light to heavy in fields surveyed over State. Counts ranged 0.15-4 per linear foot, with no particular pattern evident. (Okla. Coop. Rpt.). NEBRASKA - H. convergens averaged less than 1 per sweep in most fields; 3 fields averaged 1.8 per sweep. (Simpson). SOUTH DAKOTA - Small numbers of Hippodamia spp. present in small grain and alfalfa fields; no larvae found. (Mast). WYOMING - Hippodamia sp. adults averaged 4 per 25 sweeps in each of 25 fields of alfalfa in Fremont County and Big Horn Basin. (Fullerton). UTAH - Unspecified species less numerous than other predators in alfalfa fields having high pea aphid counts at Alpine, Utah County. (Knowlton). OREGON - Lady beetle populations diminished in spring cereal crops during first week of June in Willamette Valley; aphid populations began building up in these crops again during week ending June 18. Lady beetle adults observed feeding on spittlebug nymphs in a field of crimson clover early in June. (Dickason). ILLINOIS - Larvae of unspecified species vary 10-120 per 100 sweeps in second-growth alfalfa. (Ill. Ins. Rpt.). ALABAMA - H. convergens remains active in northern area cotton fields. (Grimes). NORTH CAROLINA - Coleomegilla maculata fuscilabris very abundant on squash and corn in Davidson County. (Berhardt, Farrier). MAINE - H. tredecimpunctata and Coccinella transverso guttata unusually abundant for this time of the season. Abundance on untreated potatoes at Presque Isle increased sharply during early part of week; egg clusters are now very common. Other miscellaneous species also present, but these predominate. (Shands).

A KLAMATHWEED BEETLE (Chrysolina gemellata) - IDAHO - Populations heavy to very heavy on goatweed north of Athol, Kootenai County; up to 500 adults per 50 sweeps. Plants completely defoliated. (Foote).

MELYRIDES (Collops spp.) - WYOMING - Adults averaged 3 per 25 sweeps in Fremont County and Big Horn Basin in each of 25 alfalfa fields. (Fullerton).

NABIDS (Nabis spp.) - OKLAHOMA - Averaged 0.5 per sweep in alfalfa checked in north central area. (Young, VanCleave). NEBRASKA - Numbers slowly increasing, but still less than 1 per sweep. (Simpson). SOUTH DAKOTA - Adults and immature stages ranged 4-11 per 10 sweeps on east central area alfalfa. (Mast). WYOMING - Averaged 2 adults per 25 sweeps in each of 25 alfalfa fields in Fremont County and Big Horn Basin. (Fullerton). UTAH - Few N. alternatus present in pea aphid-infested alfalfa at Alpine, Utah County. (Knowlton). ILLINOIS - Counts vary 10-40 per 100 sweeps in alfalfa. (Ill. Ins. Rpt.).

LACEWINGS (Chrysopa spp.) - SOUTH DAKOTA - Small population of adults and larvae found in oats and alfalfa fields in east central area. (Mast). NEBRASKA - Numbers generally increasing; highest counts in alfalfa were 6 per 10 sweeps in Custer County. (Simpson). UTAH - Numerous in alfalfa fields, with 200-300 pea aphids per sweep in Alpine, Utah County. (Knowlton).

SYRPHIDS - UTAH - Larvae of unspecified species numerous in fields of alfalfa at Alpine, Utah County, where pea aphid ranged 200-300 per sweep. (Knowlton).

ALKALI BEE (*Nomia melanderi*) - OREGON - First adults emerged in Malheur County, June 10, and in Umapine area of Umatilla County, May 29-June 3. (Stephen).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (*Popillia japonica*) - MASSACHUSETTS - First adults observed at Amherst. (Crop Pest Cont. Mess.). NEW JERSEY - Adults now emerging in State. (Ins.-Dis. Newsl., June 21). DELAWARE - Adult flight occurred around Dover, June 16, (PPC). Adults numerous on many ornamentals. (Burbutis, Mason). MARYLAND - First adults of season in Prince Georges County observed June 18. Considerable emergence observed in Prince Georges and Howard Counties. It is believed that after a good rainfall, heavy emergence will equal or better that of July 2-4, 1959. A limited number of diggings (3) showed no larvae or pupae, but 3-7 beetles per square foot ready to emerge. (PPC). Adults a serious problem on ornamentals in central and southern sections. (U. Md., Ent. Dept.).

PENNSYLVANIA - First adults of season noted at State College. (Ins. Notes).

WEST VIRGINIA - First emergence recorded June 13 at Charleston, Kanawha County. General light emergence during week ending June 24 throughout regulated areas. No evidence of heavy adult concentration at this early date. (Walsh). VIRGINIA - During week ending June 24, light to medium emergence reported throughout quarantined area. (Walsh). Some spotted heavy feeding on grape and other host foliage reported from Louisa and Hanover Counties, and light infestation in wheatfield near Tappahannock, Essex County. (Ford). Light feeding on corn and soybeans in several localized spots in eastern Southampton County (Smith) and on snap beans in one field near Exmore, Northampton County (Tate). NORTH CAROLINA - Adults light in Forsyth County, emerging week ending June 19. (Wright). Adults number much lower than at this time during 1959 in Pasquotank County; peak emergence expected during late June or early July. Adults trapped in Guilford and Forsyth Counties. Traps at Smith-Reynolds commercial airport at Winston-Salem picking up increasing number of adults; may be necessary to apply controls early this week. (PPC). SOUTH CAROLINA - First adult in mountain counties found north of Travelers Rest, Greenville County; emergence will probably increase in these counties as season progresses. Traps at produce market in Columbia picking up hitchhiking beetles. Peak emergence expected along Coastal Plain late the last week of June and early July. (PPC).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - OREGON - Adults abundant in blacklight collections at Denio, week of June 12. (Larson).

GRAIN THRIPS (*Limothrips cerealium*) - TEXAS - Occurring in large numbers in and around homes, causing annoyance. Heaviest infestation occurred May 25-June 10 in Denton County (Chada).

ORIENTAL COCKROACH (*Blatta orientalis*) - NORTH CAROLINA - Infestations have been very severe and more widespread this year than during past 10 years; period of complaints has also been much longer than in other years in Forsyth County. (Wright). MARYLAND - Infesting a home at Rockville, Montgomery County. (U. Md., Ent. Dept.).

PAVEMENT ANT (*Tetramorium caespitum*) - MARYLAND - Winged forms annoying homeowners in all sections of State. (U. Md., Ent. Dept.).

SPRINGTAILS - TEXAS - Adults of undetermined species invading homes, with control measures being applied in Motley County. (Pallmeyer).

MILLIPEDES - ALABAMA - Large numbers of unspecified species appearing in Covington County around mulched plants and in areas of loosely plowed soil. (Stephenson).

CORRECTIONS

CEIR 10(26): On highlight page under INSECT DETECTION, new county record for Apterona crenulella in California should read Lassen County. This is the first record north of Butte and Nevada Counties in that State.

CEIR 10(21):402 - Report of a GROUND PEARL (Margarodes meridionalis) from New Mexico is in error; note should be deleted.

ADDITIONAL NOTES

CALIFORNIA - A BERMUDA GRASS MITE (Aceria n. sp.) occurring on Bermuda grass in Culver City and on the University of California Los Angeles Campus in Westwood, Los Angeles County. This is first occurrence in the county. The mite also occurs in Imperial County and its appearance in a coastal area was unexpected. A heavy adult population of a JUNE BEETLE (Cyclocephala pasadenae) occurred in a lawn in Oroville, Butte County. (Cal. Coop. Rpt.).

MAINE - ENGLISH GRAIN APHID (Macrosiphum granarium) spring migrants moving; populations light on oats. BUFFALO TREEHOPPER (Stictocephala bubalus) eggs hatching in Monmouth area; injury found in 4-year-old apple trees. A LEAF-CURLING MIDGE (Dasyneura mali) - First summer generation maggots fully developed and expected to quit injured foliage during week. A WOOLLY APHID (undetermined) was moderate, with moderate damage on Douglas-fir in Orono area. WHITE-MARKED TUSsock MOTH (Hemerocampa leucostigma) light with moderate injury to Moraine locust in Orono area. Heavy flight of winged forms of BALSAM TWIG APHID (Mindarus abietinus) in Presque Isle area and UGLY-NEST CATERPILLAR (Archips cerasivorana) heavy, with moderate damage to wild cherry in Hancock County. BIRCH LEAF MINER (Fenusa pusilla) infestations and damage severe on birch in Hancock County. FACE FLY (Musca autumnalis) beginning to appear on cattle in Orono area; counts averaged less than one fly per animal.

RHODE ISLAND - Unsprayed apples in Kingston show moderate number of PLUM CURCULIO (Conotrachelus nenuphar) egg punctures. THREE-LINED POTATO BEETLE (Lema trilineata) overwintered adults very scarce; new-generation larvae mature, and locally abundant in potatoes. MEADOW SPITTLEBUG (Philaenus leucophthalmus) adults moderate in uncut alfalfa in Kingston. ALFALFA WEEVIL (Hypera postica) mature larvae, pupae and adults present in moderate numbers in uncut alfalfa in Kingston area. Caused heavy feeding damage in small spots locally and apparently building up in State. AMERICAN DOG TICK (Dermacentor variabilis) becoming less troublesome in South Kingstown and Narragansett area. (Hansen, Kerr).

VERMONT - GRASSHOPPERS Building up in some fields. POTATO LEAFHOPPER (Empoasca fabae) found for first time this year on the University plots. JAPANESE BEETLE (Popillia japonica) emergence reported in Burlington area. CODLING MOTH (Carpocapsa pomonella) egg laying activity expected to become heavier. EUROPEAN RED MITE (Panonychus ulmi) and TWO-SPOTTED SPIDER MITE (Tetranychus telarius) relatively light. HOUSE FLY (Musca domestica) and FACE FLY populations continue high. Much annoyance to cattle in all areas. (MacCollum).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quinq.	Heliothis zea	vires.
<b>ALABAMA</b>								
Auburn 6/15-21						3	49	9
Crossville 6/21,23				3		5	5	
<b>ARIZONA</b>								
Mesa 6/13-19			4	3			42	
<b>ARKANSAS</b>								
Hope 6/16-22	17	1		21			12	
Morrilton 6/16-22	164	94					91	
Kelso 6/16-22	12	7					27	
Fayetteville 6/16-22	20	13					41	
<b>DELAWARE</b>								
Bridgeville 6/14-21	8		3		43	3		
<b>FLORIDA</b>								
Quincy 6/13					2		21	
<b>ILLINOIS</b>								
Urbana 6/17-23	85	4	1	28	1			
<b>INDIANA (Counties)</b>								
Lawrence 6/14-18	367	20	3	12	23	13	7	
Tiptecanoe 6/17-22	25	1		7	4			
Vanderburg 6/17-20	18	5	1	7	2	3	4	
<b>KANSAS</b>								
Garden City 6/14-20	100	106				10		
Hays 6/15-18,21-22	654	216	10			3	4	
Manhattan 6/16-22	828	302	42	86			142	
Mound Valley 6/14,16, 18,21	50	28		4	1		6	
Wathena 6/14,15	60	30			2			
<b>LOUISIANA</b>								
Franklin 6/22			3	1			3	
Baton Rouge 6/17-23		2	108		1		26	
Tallulah 6/18-24	1						19	17
<b>MARYLAND</b>								
Fairland 6/17-21	7	5			2	7	1	
<b>MISSISSIPPI</b>								
*Stoneville 6/17-23	77	54	122	23	12		73	8
<b>MISSOURI</b>								
Sikeston 6/16-23	128	2		34			19	
Columbia 6/20-25	301	124		21		28	24	
<b>NEBRASKA</b>								
Scotts Bluff 6/9-15	3	9		46				
<b>SOUTH CAROLINA</b>								
Clemson 6/18-24	8	12	27	3	12	1	154	7
<b>SOUTH DAKOTA</b>								
Brookings 6/15-21		5						
<b>TENNESSEE (County)</b>								
Blount 6/14-20	20	25	30	10	1	5	18	
<b>TEXAS</b>								
Waco 6/18-24	39	77	81	124			745	1

\* Two traps - Stoneville.

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta quinq.	Heliothis zea vires.
<b>WISCONSIN</b>						
Middleton 6/14-20	25	5		3		
*Arlington 6/14-20	36	3		2		
*Theresa 6/14-20	6					
Oakfield 6/14-20	13				3	
Ripon 6/14-20	11					
La Crosse 6/14-20	165	4		5		
Green Bay 6/14-20	12	2				1

\* Two traps - Arlington; 3 traps - Theresa.

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported February 29 by the Plant Quarantine Division, ARS, USDA, are as follows:

KHAPRA BEETLE (Trogoderma granarium) 11 times; at Honolulu, Hawaii, in stores (2 times); Houston, Texas, in stores (2 times); New Orleans, Louisiana, in stores; Baltimore, Maryland, in stores; New York, New York, in stores (2 times); Charleston, South Carolina, in cargo (2 times); and Chicago, Illinois, in mail for first time.

WHITE GARDEN SNAIL (Theba pisana (Muller)) 3 times; at New Orleans in military cargo and at New York with cut flowers in cargo from France.

CHINESE ROSE BEETLE (Adoretus sinicus) with cut flowers in baggage destined for the mainland, at Honolulu on September 16 and November 21, respectively.

PINK BOLLWORM (Pectinophora gossypiella) in cotton bolls and seed in baggage destined for Mississippi at Honolulu on August 16.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 39 times in baggage and stores; at New York 26 times; at Savannah, Georgia, one time; at Tampa, Florida, one time; and at Houston one time.

A WEEVIL (prob. Epicaerus sp.) in potato stores from Mexico on November 11 at Corpus Christi, Texas.

ASIATIC RICE BORER (Chilo suppressalis (Wlk.)) in rice straw in mail from Japan at Seattle, Washington, on December 9.

A FRUIT FLY (Anastrepha sp. (or spp.)) in unrecorded hosts; barbadoscherries, Malpighia sp., in baggage from Peru at Miami, Florida, on January 31; in Matisia cardata fruits in baggage from Colombia on December 27, also at Miami; and in palmpeach fruits, Guilielma gasipaes, in baggage from Guatemala on November 28 at New Orleans.

MEXICAN FRUIT FLY (Anastrepha ludens) in fruit 4 times destined for Los Angeles, California, and once for Florida at Eagle Pass, Texas, on January 10; at El Paso, Texas, on January 12; at San Ysidro, California, on December 20 and January 12, respectively; and at Brownsville, Texas, on November 21.

A TERMITE (Kaloterms flavicollis (Fabr.)) (a very injurious Palearctic species which attacks fruit trees and vines) in quince fruit in baggage from Greece on December 28 at Boston, Massachusetts.

HAWAIIAN INSECT NOTES

A BRACONID (Microtypus n. sp.) was reported by J. W. Beardsley. Determinations made by C. F. W. Muesebeck. Three specimens are on hand; 2 taken in light traps on Oahu during past few years and one collected in Honolulu many years ago. A second-instar CALLIPHORID (prob. Phaenicia sp.) larva was reported coughed up by a woman at Kaneohe, Oahu, by Dr. E. Hardy. It was thought that this may be a case of intestinal myiasis. Numerous egg masses of a LAWN ARMYWORM (Spodoptera mauritia acronyctoides) were reported by F. Bianchi during week of May 23 at Kolekole Park and at Naalehu, Hawaii. This indicates that this pest is probably distributed over all the island although egg masses were not found in Wainaku area of Hilo where the initial infestation was reported in February 1959. A large proportion of the egg masses at both Kolekole Park and Naalehu consisted entirely of shriveled eggs which had failed to hatch. A lepidopterous borer, tentatively determined as KOA-SEED BORER (Cryptophlebia illepida), was reported to have severely damaged terminal twigs of a monkey-pod tree on Oahu. Infestation reported by Mihata and Riley. An EULOPHID (Syntomosphyrum sp.) was reared by E. J. Ford, Jr., from Xyleborus which was boring in Sapindus sp. in Halona Valley, Oahu, and was determined by B. D. Burks as probably a new species. This is a new record for Hawaii.

The following MITES were reported by F. Haramoto as new to the Hawaiian Islands: Bryobia praetiosa, collected at Waiakoa, Maui, April 13, 1960, on clover; Petrobia harti, collected at Manoa, Oahu, November 17, 1959, on Oxalis leaves; Eutetranychus banksi, collected at Manoa, Oahu, November 4, 1959, on papaya, croton and breadfruit leaves; Pentamerismus oregonensis, collected at Pauoa, Oahu, April 6, 1960, on Thuja; Pignephorus tarsalis, collected at Kaimuki, Oahu, December 12, 1959, in a house; Siteroptes graminum, collected at Kalaheo, Kauai, April 1960, on carnation flower by W. Yee; Acarapis externus, collected at Manoa, Oahu, November 19, 1959, on external surface of honey bee neck; Dermatophagoides scheremetewskyi, collected at Bogdanow, Kaimuki, Oahu, September 15, 1959, in rug in a house. A BUPRESTID (Chrysobothris octocola) was reported by E. J. Ford, Jr., as being first collected at Makua, Oahu, on kiawe, Prosopis juliflora, in May 1960 by E. G. Mosher. Two additional specimens were subsequently collected at Makaha, Oahu, May 30, 1960, by E. J. Ford, Jr., on parked cars. Collections of NITIDULIDS of the genus Carpophilus over a period of 10 years were sent to W. A. Connell for study. C. freemani and C. mutilatus were reported as being new records for Hawaii and some specimens of CORN SAP BEETLE (C. dimidiatus) were also determined. Two SCOLYTIDS (Stephanoderes vulgaris and S. georgiae) were identified by S. L. Wood from material collected on Oahu; the species had not previously been reported from the Hawaiian Islands. (Hawaiian Entomological Society, June 13, 1960, meeting).





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

Heavy GRASSHOPPER infestations reported in areas of Oregon, Texas and North Dakota. (p.611). MORMON CRICKET baited for control on 2,400 acres of rangeland in Arlington area of Oregon. Larval infestations of EUROPEAN CORN BORER reported over wide area; percent infestation at some localities recorded as follows: 15-60 in Hudson Valley, New York; 10-54 on Eastern Shore of Maryland; 65 in Carroll County, Indiana; 24-47 in Illinois; 10-65 in Missouri; and 50 in northern Alabama. (p. 612). BLACK CUTWORM continues to damage corn in several states. (p. 612). CORN EARWORM light to moderate in corn on Eastern Shore of Maryland and ARMYWORM reported damaging to wheat in areas of Iowa and Nebraska. High CORN LEAF APHID infestations in North Dakota reduced by syrphid larvae. (p. 613). A CORN LEAF MINER caused economic damage to 1,200-1,500 acres of sweet corn in Connecticut (p. 614) and a CHINCH BUG reported heavily damaging St. Augustine grass lawns in Alabama and Louisiana (p. 615).

THRIPS damaging leaves of soybeans in Delaware, Maryland and Kansas; of concern on peanuts in Oklahoma; and very numerous on alfalfa in areas of Utah and California. (p. 615). WEBWORMS reported damaging in areas of South Dakota, Nebraska, Oklahoma and Texas. (p. 616). CLOVER SEED WEEVIL heavy on clovers in areas of California and Idaho. (p. 617).

FALL WEBWORM infestation heaviest in several years on pecans in Louisiana. (p. 620).

COLORADO POTATO BEETLE larvae taken in North Dakota and adults abundant in upper Snake River Valley of Idaho. (p. 621). EUROPEAN CORN BORER damage to potatoes heavy on Eastern Shore of Maryland and noticeable in Delaware. PEA APHID building up on peas in west central area of Idaho. (p. 622). CABBAGEWORMS seriously damage cabbage in central Iowa. (p. 623).

First-generation BOLL WEEVIL appeared in a number of states. Infestations generally low; reported damaging in some cotton in Florence area of South Carolina and in some areas of Texas. (p. 624). COTTON FLEAHOPPER continues damaging in southwestern Oklahoma and in north central and northeast Texas. TARNISHED PLANT BUG is major pest of cotton in delta area of Mississippi. (p. 625).

ELM LEAF BEETLE abundant on elms in areas of Illinois and Oklahoma and FOREST TENT CATERPILLAR seriously weakened tupelo and gum trees on an estimated 500,000 acres in Alabama and Louisiana. (p. 627). Webs of MIMOSA WEBWORM becoming noticeable in Delaware and Maryland. (p. 629). Distribution of GOUTY PITCH MIDGE in the United States (map). (p. 628).

FACE FLY found widespread in Connecticut and reported causing a 20-percent loss of milk production in a herd of dairy cattle in central area of New Jersey. (p. 630).

JAPANESE BEETLE emergence and activity reported general in Eastern United States. Treatments around airports underway in several states. (p. 631-32).

CORRECTIONS (p. 632).

INSECT DETECTION: New state records reported were a weevil (Barypeithes pellucidus) in Indiana and a thrips (Chirothrips aculeatus) in Idaho. (p. 624). New county records reported were alfalfa weevil in Transylvania County, North Carolina (p. 617), and a psychid (Apterona crenulella) in El Dorado County, California (p. 632).

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Reports in this issue are for the week ending July 1, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

JULY 1960

The Weather Bureau's 30-day outlook for July calls for temperatures to average above seasonal normals in the southern half of the country and also along the Atlantic Coast. Below normal averages are predicted over the Great Lakes region, the Northern Plains, and the Pacific Northwest. In the remainder of the Nation temperatures should average near normal. Rainfall is expected to exceed normal in the northern third of the Nation. Subnormal amounts are anticipated in the Southeast, the southern Rocky Mountain States, and the extreme Southwest. In areas not specified rainfall should not be far from normal.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING JULY 4

The week's mean temperatures were slightly below normal along the Pacific Coast from Washington to central California, over Nevada, along the Texas coast, and from the northern Great Plains to western New York, Pennsylvania, the Carolinas, and Georgia. Above normal readings were general in New England, most of the east Gulf, and lower Mississippi Valley States, and in the Rocky Mountains, Southern Plateau, and southern Great Plains. Temperatures in all except the latter area averaged close to the seasonal normal. The largest departures from normal were centered in the west Texas-eastern New Mexico region where readings averaged 6 to 9 degrees above normal, as over 100 degree afternoon temperatures were common throughout the week. Cool Canadian air was present in the north central states most of the week, pushed southward over the central and eastern states late in the week, leaving weekly mean temperatures 3 degrees or more below normal in the northern Great Plains and portions of the Middle West and Great Lakes region.

Significant precipitation in agricultural areas west of the central Great Plains and the lower Mississippi Valley was absent during the week. Over the holiday weekend heavy rains developed from western Kansas southward through Oklahoma to the high plains of Texas and New Mexico providing generous amounts of moisture in many places. Heavy local thunderstorms in the Southern States provided temporary relief from extremely dry conditions particularly in central Florida. General rains are still needed in most sections, however, for proper crop and pasture development. Locally, excessive precipitation was again recorded in the Ohio and central Mississippi Valleys and the Great Lakes region extending to the Middle Atlantic States and New England on several days. Extensive areas of severe thunderstorms, many with hail, high winds and flooding in the Middle West, totaled several million dollars. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OREGON - Heavy infestation of Melanoplus packardii, 10-15 per square yard, present from Willow Creek, Morrow County, to Ordnanee, Umatilla County; an area 4 by 20 miles in extent; 80 percent of adults on June 19. Oedaleonotus enigma infesting sections in area averaging 15 per square yard in southeast portion of bombin range in Morrow County; were adults on June 19. (Chinn). UTAH - Grasshoppers damaging alfalfa and spring grains growing adjacent to soil bank land in Snowville and Blue Creek areas of Box Elder County and pasture damage by Camnula pellucida increased in south Richfield area of Severe County and in Manti-Ephraim area of Sanpete County. (Thornley, Knowlton). WYOMING - Grasshoppers beginning seasonal decline at Glendo study area. Predators working on population. First adults of Cordillacris occipitalis seen. (Pfadt, June 24). TEXAS - Predominant grasshoppers on soil bank land in panhandle area are Aeoloplides turnbulli bruneri, with M. bivittatus, M. occidentalis, M. bilituratus and M. packardii making up the complex. (PPC) On June 20 in Deaf Smith County, heavy migrations of A. turnbulli bruneri observed in wheat fields from soil bank land. Mass air movements observed during afternoon, with adults high in the air. (Russell). M. differentialis present in damaging numbers in Tom Green County and surrounding areas. (Boyd). OKLAHOMA - Grasshopper populations continue generally light on rangeland in western half of State, with a few isolated localities having higher counts and causing considerable local concern. Counts in southwest were mostly 3-4 per square yard on range areas and 7-10 per square yard in Harper County, northwest. Heavy populations reported on rangeland area of Kingfisher County. (Hudson, Hatfield, Owens, Bollenbach, VanCleave). SOUTH DAKOTA - Grasshoppers number 10-35 per square yard in Elk Mountain range in western Custer County; Aulocara elliotti dominant species. Grasshoppers numerous in spots along roadsides and field margins in central area. (Burge). Light in margin areas, roadsides and soil bank land in northeast and north central areas. (Mast). NORTH DAKOTA - Rangeland survey in southwest showed threatening to severe grasshopper infestations on 5,000 acres in Slope County and 1,200 acres in Golden Valley County. In northwest, a 4,000-acre tract near Williston, Williams County, showed similar infestation levels. Cooperative control programs will not be initiated this season. Grasshopper counts average 30-40 nymphs per square yard. Dominant species in southwest include Ageneotettix deorum, followed by A. elliotti, Amphitornus coloradus and M. confusus. In northwest, A. deorum is dominant, 70 percent, and M. bilituratus comprised 20 percent of population. Except for area mentioned, infestations in open range noneconomic. Development ranges from first to fifth instars; however, major population consists of first and second-instar nymphs. Adults of M. confusus present in southwest. Limited cropland survey in southwest showed scattered threatening roadside and field margin infestations. M. bivittatus dominant followed by M. bilituratus. Survey in Red River Valley counties showed mostly noneconomic infestations. (N. D. Ins. Sur.). MINNESOTA - Peak hatch of M. femur-rubrum occurred in southern half of State; populations generally light with only a few fields in southwest showing threatening numbers. M. bivittatus in third to fifth instar; counts low in southeast, south central and southwest. (Minn. Ins. Rpt.). WISCONSIN - Second to fifth-instar nymphs of M. bilituratus dominate species in wastelands and roadsides of Oconto and Marinette Counties; 12 nymphs per square yard recorded in alfalfa field. Hatching of M. femur-rubrum continues slow. (Wis. Coop. Sur.). ILLINOIS - Grasshoppers, mainly first-instar nymphs, varied 0-41 (average 17.6) per square yard in central section on grassy roadsides and 0-9 (average 3.4) per square yard in western section. Heavy rains apparently killing most nymphs before they reach second instar. (Ill. Ins. Rpt.). INDIANA - Nymphs of Melanoplus sp. swept from roadsides and alfalfa in Marshall County; counts in localized areas average 10-15 per square yard in alfalfa and 20 per square yard in field margins. (Wilson, Florentine). Nymphs of Melanoplus sp. also observed along roadsides, fence rows and field margins in localized areas of St. Joseph and Marshall Counties; counts average 10-20 per square yard. (Matthew).

MORMON CRICKET (*Anabrus simplex*) - OREGON - Total of 1,200 acres strip baited for control on 2,400 acres of rangeland in Arlington area June 20-21. Kill estimated at over 80 percent. (Chinn).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NEW YORK - In Hudson Valley, larvae, ranging to fourth instar, moving from tassel to stalk in sweet corn. On untreated corn, still in whorl; leaf injury conspicuous and tiny larvae found in whorls. Percentages of untreated plants infested ran 15-60 or more. In mid-Hudson Valley area, first-brood hatching should be ended by July 7. Moths flying in Ithaca area and egg laying underway. Larvae feeding in tassels of corn in Nassau and Monroe Counties and first eggs noted on June 22 in Erie County. (N.Y. Wkly. Rpt., June 27). MARYLAND - Larval infestations ranged 10-54 percent in late field and sweet corn on Eastern Shore; lighter in later corn. (U. Md., Ent. Dept.). DELAWARE - Larvae present in field corn in Kent and Sussex Counties. (Burbutis, Mason). OHIO - Infestation of first brood very light in central area. (Triplehorn). MICHIGAN - Eggs very abundant in Berrien and Van Buren Counties on June 21; about one week later than usual. (Hutson). INDIANA - In Carroll County corn 48-54 inches tall, 65 percent of stalks showed shot-hole injury. (Gould). Counts in Marshall and St. Joseph Counties, north central area, showed 8-24 percent plant infestation. (Matthew). ILLINOIS - Moth emergence complete except in extreme northern area, where 0-16 percent still in pupal stage. South of Highway 36, all eggs hatched and larvae first to third instar. From 10-100 percent (average 40) of plants 55-72 inches high (leaves extended) infested, with 0-10 (average 2) larvae per infested plant. Between Highway 36 and Highway 17, about 60-70 percent of egg masses hatched and larvae in first to third instar. Corn 40-63 inches high (leaves extended) shows 0-80 percent (average 24) of plants infested, with 0-12.5 (average 2.4) larvae per infested plant. North of Highway 17, about 30-50 percent of eggs hatched and larvae in first and second instar. Many eggs still being laid in this area. Corn 30-63 inches high (leaves extended) 0-100 percent infested (average 47), with 0-17 (average 4) larvae per infested plant. In general, populations concentrated in western half of State. (Ill. Ins. Rpt.). WISCONSIN - Some leaf feeding observed in few advanced fields in Walworth and Green Counties. (Wis. Coop. Sur.). MINNESOTA - Moth emergence in southern half of State nearly complete. Egg mass counts vary greatly from field to field; taller corn with greater numbers. Many fields have no egg masses; highest count in southwest (52 per 100 plants). Peak deposition should occur during week ending July 8. First generation expected to be light. Light hatch observed in southern counties. (Minn. Ins. Rpt.). IOWA - Moths active night of June 22. In Crawford and Harrison Counties, 36-inch corn had 10 new egg masses per 100 plants on June 23, with counts of 100 per 100 4-inch plants also reported in Plymouth County. Leaf feeding 20 percent on 35-inch plants at Ankeny, and in Boone County, eggs found in 20 of 32 fields checked and ranged 0-30 per 100 plants. (Iowa Ins. Inf., June 25). MISSOURI - Egg laying completed; very few fields show enough feeding damage to warrant controls. Counts ranged 10-65 percent of plants showing leaf feeding damage; high count 65. (Munson, Thomas, Wood). ALABAMA - First-generation larvae infesting about 50 percent of earliest-planted corn in northern area; some larvae in last instar. (Eden).

BLACK CUTWORM (*Agrotis ipsilon*) - MARYLAND - Causing considerable injury to field corn near Annapolis. (U. Md., Ent. Dept.). ILLINOIS - Cutworms, mostly *A. ipsilon*, damaged 0-30 percent of corn plants (averaged 1.5), with 0.5 larvae per damaged plant. Heaviest concentrations appear to be along west side of State, with moderate infestations in southeast and extreme north. (Ill. Ins. Rpt.). MISSOURI - Some damage continues to appear on late corn in north central and northeast areas. (Munson, Thomas, Wood). IOWA - New reports of damage from Madison and Benton Counties, with about 20 days active feeding expected. (Iowa Ins. Inf., June 25). WISCONSIN - Feeding appears to be subsiding in corn in Mazomanie area where pupation has now begun. In a Marquette County corn field, 10 percent reduction of stand reported. (Wis. Coop. Sur.). MINNESOTA - Causing light damage in south central district. (Minn. Ins. Rpt.).



ARMY CUTWORM (Chorizagrotis auxiliaris) - SOUTH DAKOTA - Damaging some replanted corn in Brown County. (Mast).

CORN EARWORM (Heliothis zea) - NEW YORK - First moth catch in light trap was June 18 in Nassau County; catch is early and could mean that a very different earworm season is approaching. Eggs found on tassels on June 23. (N.Y. Wkly. Rpt.). MARYLAND - Light to moderate in whorls and tassels of field and sweet corn on Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Larvae nearly mature in field corn in southern Sussex County. (Burbutis, Mason). OKLAHOMA - Counts continued lighter than 1959 in alfalfa, corn and grain sorghum in most parts of State. Counts ranged up to 1 per sweep, generally 0.3 per sweep, in alfalfa and up to 9 per 100 stalks in corn and grain sorghum. (Owens, Robinson, Hatfield, Vinson, VanCleave). KANSAS - Counts in alfalfa in southeast and east central areas averaged less than 1 larva per sweep. Corn fields examined in same area showed high of 12 percent of plants infested with 1 larva per plant in the whorls. In southeastern area, where some corn is tasseling, 10 percent of ears had 1-5 eggs on silks; larvae not observed on or in ears. (Peters).

ARMYWORM (Pseudaletia unipuncta) - MISSOURI - Larval damage ceased throughout State; heavy flights of adults observed at lights. (Munson, Thomas, Wood). NEBRASKA - Several infestations reported in wheat fields in eastern counties; treatments underway in localized areas. Counts in small portions of "downed" wheat in southeast averaged less than 0.5 per square foot. (Simpson). Light to noneconomic populations present in southwestern counties. (Pruess). Wheat harvest will start next week in southern counties if favorable weather prevails. (Simpson). IOWA - Damage reported on 4,000 acres of wheat in Harrison County. Damage stopped in southern area and some feeding continues as of June 23 in west central area. (Iowa Ins. Inf., June 25). ILLINOIS - Small, newly hatched larvae varied 0-10 (average 2.5) per 100 sweeps in grass in central and western sections. (Ill. Ins. Rpt.). WISCONSIN - Few larvae found in Walworth County. If an armyworm problem occurs, the time will be somewhere between 10th to 20th of July in southern and western areas. (Wis. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - LOUISIANA - Second-generation larvae appearing in rice in St. Tammany area; 70 per 100 sweeps. (Spink).

STALK BORER (Papaipema nebris) - ILLINOIS - Infesting 0-20 percent of corn plants in marginal rows; average 1.7 percent infested with 1 larva per infested plant. (Ill. Ins. Rpt.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEBRASKA - Light to moderate infestations found in few corn fields in Johnson County. (Simpson). NORTH DAKOTA - Populations threatening severe damage to barley in eastern area reduced by phenomenal increases of syrphid larvae. Infestations mostly now at noneconomic levels, except for few late fields where counts still high. Severe infestations observed at Casselton and Kindred in Cass County (300-400 per foot of row); at Blanchard, Trail County (400-600 per foot of row); Grafton, Walsh County (200-300 per foot of row). Crop development in these fields ranged from joint to boot. In heavily infested fields, syrphid larvae averaged 4 per 10 sweeps. Average syrphid larval count for all fields checked was 1.5 per 10 sweeps. Other predators scarce. (N.D. Ins. Sur.). MINNESOTA - Reported on barley in central, west central, southwest and south central districts. Some apparently heavy infestations observed in Redwood County. (Minn. Ins. Rpt.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - NORTH DAKOTA - Trace infestations in most small grain fields throughout eastern area; appeared more commonly in barley than in wheat or oats. (N.D. Ins. Sur.). SOUTH DAKOTA - Very small numbers found in small grain in eastern area; no damage observed. (Mast). WISCONSIN - Remains dominant species of aphid in small grains. Yellow dwarf virus disease of oats appears generally scarce. Fields with greatest number of diseased plants found in southeast. (Wis. Coop. Sur.).

GREENBUG (Toxoptera graminum) - NORTH DAKOTA - Trace infestations found in wheat, oats and barley throughout eastern Red River Valley counties. Counts extremely low. (N.D. Ins. Sur.). SOUTH DAKOTA - Populations light to moderate; some feeding injury noted from toxic secretions of aphids. (Hantsbarger). MINNESOTA - Light populations present. (Minn. Ins. Rpt.).

APHIDS - NEW YORK - Yellow dwarf virus disease of oats, spread by grain aphids, is widespread throughout many fields of oats in the State. Reports to June 27 indicated that percent of infected plants range from a trace to as high as 60 percent. (N.Y. Wkly. Rpt.). MINNESOTA - Yellow dwarf virus disease observed but not widespread or considered a problem in small grains. (Minn. Ins. Rpt.).

SIX-SPOTTED LEAFHOPPER (Macrostes fascifrons) - NORTH DAKOTA - Counts in south-east continue light but have increased over previous weeks. Count averages per 10 sweeps in small grain were as follows: Barley - 2.8; oats - 2.7; wheat - 1.7; flax - 2.7. Population counts in barley through Grand Forks and Walsh Counties averaged 3.7 per 10 sweeps. (N.D. Ins. Sur.).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Damage increased in wheat and barley in Millard County. (Knowlton).

RICE STINK BUG (Oebalus pugnax) - TEXAS - Infestations averaged 2 per sweep in rice and 3-5 per sweep on levees in Waller, Fort Bend and Harris Counties. (McClung, Hawkins).

A RICE DELPHACID (Sogata orizicola) - TEXAS - Surveys in Waller, Fort Bend and Harris County rice fields negative. (McClung, Hawkins).

CHINCH BUG (Blissus leucopterus) - KANSAS - Counts in corn and sorghum in east central and southeast areas averaged less than 5 per foot of row. A sorghum field in Lyon County had counts of about 75 bugs per plant in 2 rows adjacent to a field of ripe wheat. (Peters). TEXAS - Infestations averaged 3 per 10 sweeps on rice in Waller County. (McClung, Hawkins).

HESSIAN FLY (Phytophaga destructor) - ILLINOIS - Survey of 10 wheat fields between Bloomington and East St. Louis showed 0-100 percent (average 65) of stems infested, with average of 1.6 puparia per infested stem. Pest more numerous in western and southwestern areas than for several years, with high fall populations expected. (Ill. Ins. Rpt.).

WHEAT STEM MAGGOT (Meromyza americana) - NEBRASKA - Very light in Johnson and Gage Counties. (Simpson). NORTH DAKOTA - Several light infestations observed in southeast counties. (N.D. Ins. Sur.).

A CORN LEAF MINER (Agromyza sp.) - CONNECTICUT - Caused economic damage to 1,200-1,500 acres of sweet corn. (Johnson, Quinton).

A SAWFLY - OREGON - Larvae of an undetermined species observed damaging wheat near North Powder; approximately 15 percent of stems in 200 infested acres damaged. (Chinn).

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Adult infestations diminished somewhat in eastern area; however, infestations still quite general and numerous fields show economic levels, 2 thrips per stem. Counts averaged 2.2 per stem and infestation level of 55 percent. (N.D. Ins. Sur.).

BILLBUGS - INDIANA - Reduced stand of corn by half in Montgomery County by June 8; field treated and replanted and at present 60 percent of plants show typical plant injury. (Gould). ILLINOIS - Damaged 0-10 percent of corn plants; average 1.4. (Ill. Ins. Rpt.). OKLAHOMA - Larvae and adults caused localized light to heavy damage in few fields of grain sorghum and corn near Pauls Valley, Stillwater and Salina. (Wood, Robinson, Perry, VanCleave).

DUSKY SAP BEETLE (Carpophilus lugubris) - DELAWARE - Adults very common in corn infested with European corn borer and corn earworm in Sussex County. (Burbutis, Mason).

WIREWORMS - ILLINOIS - From 0-4 percent of corn plants damaged (average 0.4), with 0.5 larva per damaged plant. (Ill. Ins. Rpt.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - OKLAHOMA - Adults caused heavy defoliation to field of soybeans in Bryan County during week ending June 20; counts now decreased to 0.5 per linear foot, with plants 10-15 inches high. Adults light, up to 0.5 per sweep, common in alfalfa fields surveyed. (Thomas, Vinson, Hatfield, Owens, Robinson, VanCleave). DELAWARE - Adults present on alfalfa and field corn in most areas of State. (Burbutis, Mason).

A CERAMBYCID (Prionus sp.) - ALABAMA - Reported damaging Bahia grass in Houston County. (Ledbetter).

JUNE BEETLES (Cyclocephala spp.) - CALIFORNIA - General populations statewide. More prevalent than in previous years in grass and turf. Extremely heavy in Altaville, Calaveras County. (Cal. Coop. Rpt.).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Moderate to heavy infestations on St. Augustine grass lawns in central and southern areas; infestations as far north as Sylacauga. (Grimes). LOUISIANA - Serious infestations in St. Augustine grass lawns in most of southern half of State. (Spink).

THRIPS - MARYLAND - Unspecified species causing noticeable foliage streaking on late corn in Queen Annes County and all stages causing noticeable foliage streaking on soybeans in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Sericothrips variabilis adults common and nymphs numerous in field of soybeans in northern Kent County, with severe browning of leaves noted. Adults and nymphs present in soybeans in other areas of State. (Burbutis, Mason). OKLAHOMA - Thrips causing concern in most peanut producing areas of State. Controls applied in some cases. (Howell, Walton, VanCleave). KANSAS - An unidentified species causing soybeans to wilt in Sedwick County area. (Gates). ARIZONA - Unspecified species high in Yuma County Bermuda grass grown for seed; averaging 7-10 per boot. (Ariz. Coop. Sur.). UTAH - Thrips very numerous on alfalfa at Lehi and Springville in Utah County. (Knowlton). CALIFORNIA - Heavy populations of Frankliniella occidentalis on alfalfa in Chico, Butte County. (Cal. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - OREGON - Populations continue low on all host crops in State. Alfalfa fields swept week of June 24 in Union, Wallowa, Baker, Crook and Malheur Counties averaged 3 per sweep. (Capizzi). UTAH - Increased in second-crop alfalfa in some Salt Lake, Davis, Weber and Cache County farms. (Knowlton). WYOMING - Averaged 5 per sweep in alfalfa checked in Goshen and Laramie Counties. (Fullerton). COLORADO - Counts 250-1,000 per 100 sweeps in alfalfa in Larimer County and 1,000-1,500 in Otero County. (Colo. Ins. Sur.). OKLAHOMA - Populations continue to decline in alfalfa with only trace numbers now present. Infestations in few isolated fields, however, still continued to average as high as 25 per sweep in northwest. (Owens, Robinson, Hatfield, Vinson, VanCleave). KANSAS - Counts in alfalfa in southeast and east central areas ranged 5-25 per sweep. (Peters). NEBRASKA - Populations low; averaged 5 per sweep in southeastern counties. (Simpson). SOUTH DAKOTA - Numbers decreased; no damage found in alfalfa. (Mast). MINNESOTA - Counts increased sharply in southwest and south central districts. Counts per 10 sweeps are as follows: southwest 30-400; south central 40-2,000; southeast 25-150; central 10-75; northwest 20-50. (Minn. Ins. Rpt.). DELAWARE - Remains present on alfalfa, below 5 per sweep. (Burbutis, Mason).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations continued to increase in alfalfa in Yuma County and in central area. (Ariz. Coop. Sur.). OREGON - None found in State so far this season. (Capizzi). OKLAHOMA - Populations continued very light across State, with only a few isolated fields in Tillman and Bryan Counties having moderate numbers, 15-30 per sweep. (Hatfield, Vinson, Owens, Robinson, VanCleave).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - SOUTH DAKOTA - Abundant in all alfalfa checked in northeast, north central and central areas, with counts as high as 19 per sweep in Codington County. (Mast). MINNESOTA - Counts per 10 sweeps are as follows: southwest 10-21; south central 2-15; central 2-30; west central 2-100; northwest 10-20. (Minn. Ins. Rpt.). WISCONSIN - Adults and nymphs variable in alfalfa in Waupaca, Waushara, Walworth, Oconto, Rock, Racine, Dane, Shawano, Marinette, Outagamie, Marquette and Portage Counties. In general, A. lineolatus appears more numerous than A. rapidus. (Wis. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - MARYLAND - Adults common in alfalfa in Howard and Frederick Counties. (U. Md., Ent. Dept.). WISCONSIN - Numerous in Shawano County, counts as high as 7 nymphs per 10 stems in alfalfa. Adults common and migration to many crops other than alfalfa underway in southern and western counties. (Wis. Coop. Sur.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - SOUTH DAKOTA - Large numbers attracted to yard lights in town of Clear Lake, Deuel County; small populations in fields of legumes in northeast one-fourth of State. (Mast).

POTATO LEAFHOPPER (Empoasca fabae) - SOUTH DAKOTA - First specimen taken in alfalfa in Codington County on June 27. (Mast). WISCONSIN - Migrants increasing in alfalfa. (Wis. Coop. Sur.). DELAWARE - Adults and nymphs present in soybeans and alfalfa in Sussex County. (Burbutis, Mason).

TARNISHED PLANT BUG (Lygus lineolaris) - ALABAMA - Moderate infestation observed on alfalfa in Etowah County. (Grimes). DELAWARE - Adults averaged 2-3 per sweep in alfalfa and 1 per sweep in soybeans in New Castle County; nymphs increasing. (Burbutis, Mason). MINNESOTA - Counts per 10 sweeps are as follows: southwest 2-7; south central 3-7; southeast 4-20; central 5-10; west central 1-40; northwest 3-5. (Minn. Ins. Rpt.). NEBRASKA - Numbers increasing in central and southern areas of State. Most alfalfa fields averaged 2 per sweep. (Simpson).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations high in alfalfa statewide. Counts average 15-20 per 10 sweeps in hay fields and 30-40 per 10 sweeps in Yuma County seed fields. (Ariz. Coop. Sur.). COLORADO - Counts of L. desertus, dominant species, ranged 40-50 per 100 sweeps in alfalfa in Otero County. (Colo. Ins. Sur.). WYOMING - Adults averaged 2 per sweep and nymphs 3 per sweep in alfalfa checked in Goshen and Laramie Counties. (Fullerton).

GARDEN FLEAHOPPER (Halticus bracteatus) - NEW JERSEY - Very numerous in some northern alfalfa fields. (Ins.-Dis. News1., June 28). DELAWARE - Adults present in soybeans, with no noticeable increase. (Burbutis, Mason).

WEBWORMS - SOUTH DAKOTA - Larvae number an estimated 25 per square foot in some areas in Bennett County; feeding mainly on weeds and somewhat on lower leaves of winter wheat. (Hantsbarger). OKLAHOMA - Loxostege sp. common but generally light in most alfalfa. Controls applied to one field of alfalfa in Canadian County and infestations caused damage in Altus area and in some east central areas. (Hatfield, Owens, Bollenbach, Vinson, Robinson, Echols, Howell, VanCleave). TEXAS - L. similalis heavy in alfalfa in Wharton County. (Texas Coop. Rpt.). NEBRASKA - Heavy populations of Loxostege spp., 10-100 per square foot, found in wheat, sorghum, sugar beets and other crops. Infestations range from Deuel to Box Butte Counties in panhandle area. (Andersen).

**ALFALFA LOOPER** (Autographa californica) - IDAHO - Late-instar larvae very common on an 80-acre clover field near Nez Perce. Infestation general and damage minor. (Dailey). Common to abundant on alfalfa in Twin Falls area. Following alfalfa cutting for hay, larvae migrating into beet and bean fields in area. (Gibson, Daigh).

**ALFALFA CATERPILLAR** (Colias philodice eurytheme) - COLORADO - Larvae 10-20 per 100 sweeps in alfalfa in Larimer County. (Colo. Ins. Sur.). WYOMING - Larvae averaged 4 per 25 sweeps in alfalfa checked in Goshen and Laramie Counties. (Fullerton). DELAWARE - Larvae present on soybeans in New Castle County. (Burbutis, Mason).

**VARIEGATED CUTWORM** (Peridroma saucia) - NEBRASKA - Larvae preventing recovery of alfalfa following first cutting in scattered fields in southwestern counties. (Pruess).

**WESTERN YELLOW-STRIPED ARMYWORM** (Prodenia praefica) - CALIFORNIA - Heavy infestations occurring on alfalfa in Sheldon area, Sacramento County. (W. G. Golden).

**ALFALFA WEEVIL** (Hypera postica) - NEW JERSEY - Damage to alfalfa decreasing; injury heavier than in most previous years, particularly in central and northern counties. (Ins.-Dis. Newsl., June 28). NEW YORK - Second-brood weevils emerged in Ulster County. (N.Y. Wkly. Rpt., June 27). MARYLAND - First-generation adults averaged 4 per 10 sweeps on second-growth alfalfa in Frederick County. (U. Md., Ent. Dept.). NORTH CAROLINA - Taken in Transylvania County for first time. (Farrier). COLORADO - Larvae 0-20 per 100 sweeps in alfalfa in Larimer County. (Colo. Ins. Sur.). WYOMING - Larvae averaged 4 per sweep in alfalfa checked in Goshen and Laramie Counties; 90 percent of fields cut. (Fullerton). UTAH - Larvae held some Cache and Box Elder County second-growth alfalfa back for 3 weeks, where infestations severe. (Knowlton).

**CLOVER SEED WEEVIL** (Miccotrogus picirostris) - CALIFORNIA - Heavy populations on red clover in Smith River Valley, Del Norte County, and on white clover pastures northeast of Burney, Shasta County. (Cal. Coop. Rpt.). IDAHO - Continues very abundant on many clover fields in Latah, Nez Perce, Lewis, Clearwater and Idaho Counties. In some cases controls do not appear satisfactory. (Gittins).

**CLOVER ROOT CURCULIO** (Sitona hispidula) - CALIFORNIA - Light on clover pastures in Smith River, Del Norte County. (Cal. Coop. Rpt.).

**SWEETCLOVER WEEVIL** (Sitona cylindricollis) - NORTH DAKOTA - A seedling sweet-clover field near Prosper, Cass County, showed 100 percent of plants infested with 100 Therioaphis riehmi per plant; damage severe. Weevil defoliation of plants in same field estimated at 75 percent. (N.D. Ins. Sur.).

**VETCH BRUCHID** (Bruchus brachialis) - TEXAS - Heavy emergence of adults in fields and from harvested seed in Madison County; harvest ceased because of heavy damage. (Randolph).

**A SCARAB** (Strigoderma arboricola) - INDIANA - Adults especially abundant in Columbus area, clustering on heads of red clover. (Chandler). ILLINOIS - Averaged 1 per 6 linear feet of row and feeding on soybean leaves in field near Havana. (Ill. Ins. Rpt.).

**ASH-GRAY BLISTER BEETLE** (Epicauta fabricii) - SOUTH DAKOTA - Found in all alfalfa checked in northeast area; counts ranged 1-17 per 10 sweeps. (Mast).

**A SPIDER MITE** (Tetranychus cinnabarinus) - ARIZONA - Infestations continue to increase on Yuma County alfalfa seed fields. (Ariz. Coop. Sur.).

JAPANESE BEETLE (Popillia japonica) - MARYLAND - Causing light to moderate foliage injury to soybeans in Worcester County. (U. Md., Ent. Dept.).

DELAWARE - Adults present and causing light feeding injury to alfalfa, soybeans and field corn statewide. (Burbutis, Mason).

PALE-STRIPED FLEA BEETLE (Systema blanda) - DELAWARE - Adults common on soybeans, New Castle County; causing light feeding injury. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Light to moderate foliage damage noted on soybeans in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Adults common in field of soybeans in southeastern Sussex County. (Burbutis, Mason). ILLINOIS - Adults varied 0-3 per 6 linear feet of row in soybeans in central area. (Ill. Ins. Rpt.). OKLAHOMA - Heavy damage to foliage noted in field of soybeans in Muskogee County. (Robinson).

A BEETLE (Colaspis sp.) - LOUISIANA - Averaged 67 per 100 sweeps on soybeans in Caldwell Parish. (Spink).

A CUTWORM - GEORGIA - Moderate to heavy defoliation of peanuts in Seminole and Irwin Counties. (Brannen).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - DELAWARE - Larvae found in 2 soybean fields in Sussex County. (Burbutis, Mason).

RED-NECKED PEANUTWORM (Stegasta basqueella) - GEORGIA - Light infestation on peanuts in Houston County. (Allmond). OKLAHOMA - Causing concern in isolated fields of peanuts in Caddo County, with controls being applied in some cases. (VanCleave).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - ILLINOIS - First moths emerged from first-brood infested apples in Carbondale area, June 24. Based on weather conditions, it is forecast that first hatch of the second brood will occur July 1-4 in the area. (Chandler, June 29). INDIANA - First-brood moths completed emergence in cages June 20 in Vincennes area. Second-brood moths began emerging in insectary June 27, which is probably a bit ahead of field emergence, but indicates that time is near for new entries. (Cleveland, June 27). MISSOURI - No new entries reported from any part of State, but larvae in unsprayed apples in central area vary one-half to full grown. Second brood should appear just after July 4. (Wkly. Rpt. Fr. Gr.). NEW YORK - Larval entries into fruit found June 18 in Clinton County. During following week, entries were found in several orchards in county where some activity of this species was observed during 1959. Activity continues in Niagara County at moderate level, with moths flying when temperatures are favorable. Conditions in Orleans County were favorable on nights of June 22 and 23 for moth activity. Entrances were observed June 23 in neglected orchards in Wayne County. Emergence has dropped considerably in seeded cages in Monroe County and numbers are very light in bait traps. (N. Y. Wkly. Rpt.). NEW JERSEY - No observations made of fresh damage to apples in central or southern areas for past week. (Ins.-Dis. News1., June 28).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - ILLINOIS - Remains extremely light on apples in Carbondale area to June 29. (Chandler). NEW JERSEY - Early second-brood larvae should be active on apples shortly. (Ins.-Dis. News1., June 28). NEW YORK - Occasional feeding of first brood found June 21 and 23 in Clinton County. (N. Y. Wkly. Rpt.).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - NEW YORK - Infestation above normal in Monroe County this year. First-brood moth flight appears about over in Niagara County. (N. Y. Wkly. Rpt., June 27). ILLINOIS - New brood which showed some indication of attacking peach terminals last week in Carbondale area, increased somewhat. Infestation is light to date, however. (Chandler, June 29). MISSOURI - No fresh sign in southeast area, but larvae still in terminals in central area, varying from one-third to full grown. (Wkly Rpt. Fr. Gr.). KANSAS - Second-generation larvae boring in terminals of peach trees June 22-23 in Franklin County; averaged 5 larvae per 100 trees. (Thompson).

APPLE APHID (*Aphis pomi*) - ILLINOIS - Numbers being reduced in apple orchards in Carbondale area, but increasing in orchards where no controls have been applied. (Chandler, June 29). NEW YORK - A moderate but steady buildup continues in most Columbia County orchards; few colonies observed in Niagara County. (N. Y. Wkly. Rpt., June 27). MASSACHUSETTS - Numerous in many apple orchards. (Crop Pest Cont. Mess.).

APPLE MAGGOT (*Rhagoletis pomonella*) - MASSACHUSETTS - Adults emerging. (Crop Pest Cont. Mess.). NEW YORK - Adult emergence increasing gradually and at normal rate in eastern area; began emerging in cages in small numbers in Columbia County, June 21. Have not begun to emerge in Monroe County. (N. Y. Wkly. Rpt., June 27). OHIO - First adult collected on cherry fruit fly trap June 21 in Lorain County. (Still).

SCALE INSECTS - CALIFORNIA - *Lepidosaphes ulmi* and *Aspidiotus perniciosus* medium on apples in Kneeland, Humboldt County. *A. juglans-regiae* extremely heavy on pear in Huntington Beach, Orange County, and heavy on black walnut in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

ORCHARD MITES - MASSACHUSETTS - *Panonychus ulmi* numerous in some apple blocks. (Crop Pest Cont. Mess.). NEW YORK - *P. ulmi* not numerous on apples generally, in Columbia County; increasing in Orleans County where not controlled. (N. Y. Wkly. Rpt., June 27). INDIANA - Growers in Vincennes area report that problems with *P. ulmi* are increasing. (Cleveland, June 27). ILLINOIS - Unspecified species

spotty on apples in Carbondale area. (Chandler, June 29). COLORADO - Tetranychus telarius building up on bindweed, Convolvulus and cover crops in orchards in Delta, Mesa and Garfield Counties. (Colo. Ins. Sur.).

PEACH TREE BORER (Sanninoidea exitiosa) - COLORADO - First adult emergence occurred June 18 in Delta County and June 20 in Mesa County. (Colo. Ins. Sur.).

A SATURNIID (Pseudohazis eglanterina) - CALIFORNIA - Heavy on prune in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - ILLINOIS - Second brood appears to be slightly earlier than during 1959 in the Carbondale area. Jarring does not yet indicate that new-brood adults have appeared in peach orchards, despite some rains. (Chandler, June 29). MISSOURI - Egg-laying punctures found on plums in southeast on June 28; second brood underway in area. (Wkly. Rpt. Fr. Gr.). NEW YORK - First matured larvae found in Monroe County peaches June 23. (N. Y. Wkly. Rpt.). NORTH CAROLINA - Heavy on plums in a home garden. (Wray). GEORGIA - Recent showers facilitated emergence of new first-generation adults from soil in Ft. Valley area; no second-generation eggs deposited to June 29. (Snapp).

DRIED-FRUIT BEETLE (Carpophilus hemipterus) - CALIFORNIA - Heavy adult population in apricot fruit in Fair Oaks, Sacramento County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (Eriophyes insidiosus) - CALIFORNIA - A spot check survey in 21 counties revealed this vector of peach mosaic present on peach trees in Fillmore and Ojai, Ventura County, without the disease. This area is a considerable distance from the Los Angeles County infestation. Results of detection and survey show that the vector is not present north of the Tehachapi Mountains. (Cal. Coop. Rpt.).

CHERRY FRUIT FLY (Rhagoletis cingulata) - NEW YORK - First adult found in cages at Geneva June 20, with emergence light and steady since. Emergence has been steady and heavy in Monroe County. (N. Y. Wkly. Rpt., June 27).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Heaviest infestation in several years being reported from all areas of State on pecans. Some small trees completely covered with webbing. (Spink). GEORGIA - Larval nests appearing on pecan trees in Ft. Valley area; infestation light to June 27. (Snapp). DELAWARE - Abundant on pear in Sussex County June 22 and causing moderate feeding injury. (Burbutis, Mason).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Counts averaged 12 and 28 percent of nut clusters infested in 2 groves of native pecans checked in Pauls Valley area, Garvin County. (McLemore, VanCleave).

WALNUT CATERPILLAR (Datana integerrima) - ALABAMA - Moderate on pecans in south-east section of State. (Eden).

PECAN PHYLLOXERA (Phylloxera devastatrix) - OKLAHOMA - Emergence has been completed in southern half of State. (VanCleave).

YUMA SPIDER MITE (Eotetranychus yumensis) - ARIZONA - Light on Yuma County citrus. (Ariz. Coop. Sur.).

GRAPE BERRY MOTH (Paralobesia viteana) - MISSOURI - Heavy infestations found in 2 vineyards in Rosati area. (Wkly. Rpt. Fr. Gr.).

GRAPE SAWFLY (Erythraspides vitis) - MARYLAND - Heavy, local infestation on grapes at Brookeville, Montgomery County; required controls. (Hambleton).



TRUCK CROP INSECTS

POTATO FLEA BEETLE (Epitrix cucumeris) - DELAWARE - Adults present on potatoes throughout State, with no increase generally. (Burbutis, Mason). MAINE - Populations of overwintered adults very small and leaf-feeding damage generally light in Presque Isle area. (Shands). MARYLAND - Adults, apparently a new generation, abundant and destructive to untreated potatoes in Queen Annes County. (U. Md., Ent. Dept.). SOUTH DAKOTA - Quite abundant on potatoes. (Hantsbarger). NORTH DAKOTA - Averaged 38 adults per 10 sweeps in potato fields surveyed in Grand Forks and Walsh Counties; leaf feeding injury evident. (N. D. Ins. Sur.).

FLEA BEETLES - DELAWARE - Phyllotreta cruciferae adults more numerous, with definite increase on horseradish in Kent County; counts averaging 6-8 per plant. (Burbutis, Mason). WISCONSIN - Unspecified species abundant in some untreated potato fields but scarce in treated fields. Populations low in southeastern area. (Wis. Coop. Sur.). MINNESOTA - Damage apparent on potatoes in Hollandale and Red River Valley areas. (Minn. Ins. Rpt.). COLORADO - Epitrix sp. ranged 20-30 per 100 sweeps on potatoes, beets, spinach and turnips in Otero County; P. striolata numerous in Garfield County sugar beets; and Systema blanda numerous in some bean fields in Weld County. (Colo. Ins. Sur.). WYOMING - Phyllotreta sp. adults averaged 3 per 100 plants in sugar beet fields and 8 bean fields checked in Goshen and Laramie Counties. (Fullerton). IDAHO - Adults of E. subcristata abundant in Butte and Custer Counties. (Bishop). CALIFORNIA - P. decipiens adults heavy on mustard for seed in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NORTH DAKOTA - First larvae of season found near Lankin, Walsh County. No adults found in any field surveyed through the upper Red River Valley. (N. D. Ins. Sur.). MINNESOTA - Light on potatoes in Hollandale area. (Minn. Ins. Rpt.). IDAHO - Adults usually abundant throughout the upper Snake River Valley. Eggs being deposited in many fields. (Bishop). Injured potatoes in a field near Parma; extensive leaf damage occurred. (Scott).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults present on potatoes, lima beans and peppers in New Castle County; adults and nymphs fairly common on potatoes and lima beans in Kent County; and a noticeable buildup of adults and nymphs on potatoes and lima beans in Sussex County. (Burbutis, Mason). MARYLAND - Moderate to heavy on beans and potatoes in Queen Annes and Worcester Counties. (U. Md., Ent. Dept.). INDIANA - Increasing on potatoes. (Gould). IOWA - Damaged beans by reducing quality and yield. Laying eggs in central area and nymphs just beginning to emerge. (Iowa Ins. Inf., June 25). WISCONSIN - Populations light on potatoes in southeastern area. (Wis. Coop. Sur.). NORTH DAKOTA - Trace infestation in a field of potatoes near Kempton, Grand Forks County. (N. D. Ins. Sur.).

Potato Aphids in Maine - Populations still very light but increasing rapidly at Presque Isle. In untreated experimental plots at the Aroostook Farm an average of 1.4 percent of potato plants infested. In commercial plantings, 4-31 percent of plants examined infested. POTATO APHID (Macrosiphum solanifolii) predominates, followed by BUCKTHORN APHID (Aphis nasturtii), FOXGLOVE APHID (Myzus solani) and GREEN PEACH APHID (Myzus persicae). An infestation of green peach aphid found for first time this season on Aroostook Farm. (Shands).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Present on peppers and cucumbers in New Castle County and light on lower leaves of potatoes in Kent and Sussex Counties. (Burbutis, Mason). MARYLAND - Light on the more advanced peppers in Worcester County. (U. Md., Ent. Dept.). NEW YORK - Small numbers found in most potato fields in Suffolk County. (N. Y. Wkly. Rpt., June 27). IDAHO - Developing rapidly in home gardens in Ashton and Mackay. (Bishop).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Injury to potatoes noticeable now with early death of many vines throughout State. (Burbutis, Mason). MARYLAND - Emergence of second-generation adults from potatoes underway in Worcester County. Injury to potatoes on Eastern Shore has been heavy. (U. Md., Ent. Dept.).

STALK BORER (Papaipema nebris) - KANSAS - Attacking tomatoes, potatoes and other vegetables in Riley County. (Knutson). OKLAHOMA - Attacking vegetables in Payne County. (Howell).

HORNWORMS (Protoparce spp.) - DELAWARE - Larvae fairly common locally. (Burbutis, Mason). MARYLAND - Eggs being deposited on peppers in Worcester County. (U. Md., Ent. Dept.).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Appearing in light trap material from Mesa, Costilla, Otero and Boulder Counties. A few seen in Larimer County. (Colo. Ins. Sur.).

BET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 1 per 100 plants on sugar beets in Laramie County, and 3 per 100 plants in Goshen County. (Fullerton). COLORADO - Averaged 1-2 larvae per 10 sugar-beet plants in Larimer County; defoliation occurring in a few fields in Mesa County where no controls used. (Colo. Ins. Sur.). NORTH DAKOTA - Early instar larvae noneconomic in beet-field near Prosper, Cass County; few adults and unhatched egg masses observed. (N. D. Ins. Sur.).

A NEMATODE (Heterodera schachtii) - WYOMING - Seriously damaged field of sugar beets near Veteran, Goshen County. (Fullerton).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Adults and larvae common on beans in Sussex County, with heavy feeding injury in some fields. Present also in Kent and New Castle Counties on beans. (Burbutis, Mason). MARYLAND - All stages very injurious to beans in home gardens over State. (U. Md., Ent. Dept.). MICHIGAN - Feeding on colored beans at Stanton on June 20; eggs not found. (Hutson). COLORADO - Adults 1-7 per 10 bean plants in Weld and Larimer Counties. (Colo. Ins. Sur.). WYOMING - Light damage in some bean fields. Adults averaged 2 per 100 plants in beans in Goshen and Laramie Counties. (Fullerton).

COTTON SQUARE BORER (Strymon melinus) - DELAWARE - Larvae present on lima beans in central Kent County. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - DELAWARE - Adults present on beans in New Castle and Sussex Counties. (Burbutis, Mason).

JAPANESE BEETLE (Popillia japonica) - DELAWARE - Adults present on lima beans in New Castle County and on tomatoes in Sussex County. (Burbutis, Mason).

LEAFHOPPERS - NEW YORK - Some bean fields in Oneida County suffered extensive damage. (N. Y. Wkly. Rpt., June 27).

TOMATO FRUITWORM (Heliothis zea) - DELAWARE - Larvae causing light feeding injury to lima beans in Kent County. (Burbutis, Mason). CALIFORNIA - Light infestations damaging strawberry fruit in Blythe, Riverside County. (Cal. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - WISCONSIN - Counts of 40-50 per sweep in 15-inch peas, June 27. Due to forceful rains on June 28, counts dropped to 15-20 per sweep. Development of populations slow in fields unaffected by rain, including treated fields. (Wis. Coop. Sur.). IDAHO - General buildup in numerous areas throughout west central area. In several hundred acres of peas in Culdac area, populations run as high as 100 per sweep. (Dailey, Kambitsch).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Present on lima beans in New Castle County and on cucumbers in Sussex County. (Burbutis, Mason). OKLAHOMA - Caused extensive damage to gardens in eastern Bryan County. (Thomas, June 20).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - INDIANA - Moved into experimental plots June 24; exceedingly destructive at present. (Gould). IOWA - Laying eggs in central area. (Iowa Ins. Inf., June 25). COLORADO - Counts 0-30 per 100 sweeps on summer squash in Larimer County. (Colo. Ins. Sur.) SOUTH DAKOTA - Attacking cucumbers, squash and melons. (Hantsbarger).

A SPIDER MITE (Tetranychus cinnabarinus) - ARIZONA - Continues to increase in Yuma County watermelon and cantaloup fields. (Ariz. Coop. Sur.).

A PIESMATID (Piesma cinera) - COLORADO - Numerous on summer squash in Larimer County. (Colo. Ins. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - First larvae of season noted in one small field of cabbage in southeastern Sussex County. (Burbutis, Mason). TEXAS - Heavy on late cabbage in Uvalde County. (Prucia). OKLAHOMA - Present on cabbage in home gardens and has caused some concern in Payne County. (Howell). IOWA - Seriously damaging cabbage in central area. (Iowa Ins. Inf., June 25).

IMPORTED CABBAGEWORM (Pieris rapae) - IOWA - Seriously damaging cabbage in central area. (Iowa Ins. Inf., June 25). DELAWARE - Larvae abundant, 6-8 per cabbage head, in one field in Kent County; causing severe injury. Present on horseradish in Kent County and cabbage in Sussex County. (Burbutis, Mason).

DIAMONDBACK MOTH (Plutella maculipennis) - IOWA - Seriously damaging cabbage in central area. (Iowa Ins. Inf., June 25). DELAWARE - Larvae common and causing light injury to cabbage locally in Sussex County. (Burbutis, Mason).

CABBAGE MAGGOT (Hylemya brassicae) - MICHIGAN - Infestations not found. (Hutson).

GRASSHOPPERS - DELAWARE - Causing noticeable injury to horseradish in Kent County. (Burbutis, Mason).

A COREID (Liorhyssus sp.) - CALIFORNIA - Heavy adult populations on mustard for seed in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

ONION THRIPS (Thrips tabaci) - COLORADO - Counts 10-15 per onion plant in Otero County; 4-8 per plant in Mesa County; 0-3 per plant in three-leaf stage in Larimer County. (Colo. Ins. Sur.). IDAHO - Thrips, probably mostly this species, much more abundant in carrot umbels than in previous 2-3 years. (Scott).

LYGUS BUGS (Lygus spp.) - IDAHO - Mostly L. elisus and L. hesperus increasing on untreated carrot seed fields near Parma, 4 adults and no nymphs counted on 24 umbels June 16. On June 28, one adult and 35 nymphs counted on 24 umbels. (Scott).

CELERYWORM (Papilio polyxenes asterius) - INDIANA - Larvae unusually common on umbelliferous weeds and related garden crops. (Chandler).

SPINACH LEAF MINER (Pegomya hyoscyami) - IDAHO - Abundant on home garden spinach and swiss chard in southeastern area. (Bishop).

VARIEGATED CUTWORM (Peridroma saucia) - CALIFORNIA - Larvae heavy and damaging lettuce in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - A moderate, general infestation in 8 large hop yards along American and Consumes Rivers in Sacramento County, with some vines having 20 plus larvae skeletonizing all leaf stages and cutting stems. Present damage up to 12-foot level. Control about 90 percent effective. (W. G. Golden).

A THRIPS (Chirothrips aculeatus) - IDAHO - Collected on flixweed at Glenns Ferry, May 15, 1959. Det. by K. O'Neill June 1, 1960. New State record. (Valcarce).

A WEEVIL (Barbypeithes pellucidus) - INDIANA - Collected at Lafayette in early June; this is first record for State. Det. by R. E. Warner. Recorded as attacking strawberries in Europe. (Chandler).

#### TOBACCO INSECTS

BUDWORMS (Heliothis spp.) - MARYLAND - Increased over previous week on tobacco in St. Marys and Calvert Counties. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Increasing on late tobacco in Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Emergence of first-generation adults now occurring on late tobacco in Calvert County. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - In early cotton from Hoke, Robeson and Scotland Counties to Northampton and Sampson, many blooms evident. Squares plentiful and where early treatments followed, weevil populations generally very low. Majority of overwintered weevils emerged from hibernation. First-generation adults expected to appear about July 4 or 5 in lower southeastern counties and about July 10-12 in central northern counties. (Cott. News Lett.). SOUTH CAROLINA - Percent infestation in cotton was 7 in treated fields and 18 in untreated fields. Overwintering weevils continue to emerge and puncture squares and new weevils also being found in many fields. About 33 percent of cotton has been treated to June 28, compared with 60 percent at same time in 1959. (Cott. Lett., June 28). In Florence area, fewer overwintering weevils emerging from hibernation. An occasional first-generation weevil seen. Due to impossibility of treatments, infestations in some fields have built up to damaging levels. (Taft, Hopkins, Jernigan). ALABAMA - Infestations decreased some, with counts ranging 5-60 percent in central and southern areas. Average infestations 15-20 percent. (Grimes). TENNESSEE - Weevils very active in southern counties in western area. Rains favored weevil reproduction. Most overwintered weevils should have emerged. (Locke). MISSISSIPPI - First-generation hatch occurring during latter part of week, but extremely light. General infestation low in delta counties. Some "hot spots" have extremely high infestations. Average infestation for area less than 3 percent. (Merkl et al.).

ARKANSAS - Overwintering emergence heavy and first-generation emergence taking place in older cotton. A general emergence of first generation expected July 7-10. (Ark. Ins. Rpt.). LOUISIANA - Percent square infestation in Tallulah area was 7, ranging 0-42 percent. The percentage of survival in hibernation cages to July 1 was 2.44, compared with 2.96 at same time in 1959. Emergence completed by this date in 1959. (Smith et al.). Percent infestation was 48 in old cotton in 7 fields examined in Pointe Coupee Parish; ranged 0-10 in cotton in Evangeline Parish; averaged 2, 20 and 50 in 3 fields in Tensas Parish; averaged 2 and 3 in 2 fields in Rapides Parish; and in Acadia Parish, one older field averaged 25 percent and 2-3 percent in other fields examined. (Spink). OKLAHOMA - In fields checked throughout State where squares were forming, counts averaged 6-12 percent of squares infested. In some fields in south central area, counts ranged up to 21-24 percent infested squares. Counts in younger cotton much lighter. (Flora, Hatfield, Vinson, Stiles, Robinson, VanCleave). TEXAS - Infestations generally increased, with some areas reporting heavy infestations. (Gaines). Infestation in McLennan and Fall Counties averaged 32.6 percent in 6 untreated fields and 19.6 percent in 33 early treated fields for an overall average of 21.1 percent. (Parencia, Cowan, Davis).

BOLLWORMS (*Heliothis* spp., et al.) - SOUTH CAROLINA - Activity reported increasing throughout State. Newly laid eggs readily found, expected to hatch in 3-5 days. (Cott. Lett., June 28). In Florence area, light to medium infestations present. Infestations becoming serious in fields not properly treated. (Taft, Hopkins, Jernigan). ALABAMA - Infestations lower in most areas of State than reported previous week. Counts range 0-13 per 100 terminals, averaging 2-3 per 100 terminals in central and southern areas. Activity in Talladega, St. Clair, Shelby and Etowah Counties negligible. (Grimes). TENNESSEE - Appearing in cotton in western area; infestations light. (Locke). MISSISSIPPI - Egg deposition dropped markedly during week. Small larvae common in many untreated fields in delta counties. Treatments effective. (Merkl et al.). ARKANSAS - Egg counts down; most larvae found in fields are large and near pupation. Predators keeping infestations well under control. (Ark. Ins. Rpt.). LOUISIANA - Average square infestation in Tallulah area was 10 percent, ranging 2-28 percent. Square damage general and above normal. Controls being used. Eggs averaged 9 and larvae 9.25 per 100 terminals. (Smith et al.). Larvae averaged 1 per terminal in Pointe Coupee Parish; ranged 0-10 percent infestation in Evangeline Parish; light to medium infestations in St. Landry Parish; and eggs averaged 2-3 per 100 terminals in Tensas, Rapides, Avoyelles and Acadia Parishes. Species reported as probably *H. virescens* in most cases. (Spink). OKLAHOMA - Light infestations becoming common in counties along Red River in southwest and south central areas. None or very light, isolated infestations reported in other areas of State. (Flora, Hatfield, Vinson, Stiles, Robinson, VanCleave). TEXAS - Activity increased in many areas, with no reports of damaging infestations, with the exception of the lower Rio Grande Valley where high counts were found. (Gaines).

FLEAHOPPERS - ALABAMA - Light infestations in northern area. (Grimes). LOUISIANA - Each plant examined in 5 fields of cotton in Evangeline Parish supported 2-3 *Psallus seriatus*. As many as 6 found in white blooms. Necessary controls recommended. (Spink). OKLAHOMA - Damaging infestations of *P. seriatus* continued to be reported in cotton in southwest. Counts ran up to 30-40 per 100 terminals in Harmon County and as high as 4 per linear foot in Tillman County. None to very light elsewhere in State. (Flora, Hatfield, Vinson, Stiles, Robinson, VanCleave). TEXAS - Populations of *P. seriatus* continued to be of some concern in north central and northeast areas, with migrations just starting in west central and north and south plains areas. (Gaines). ARIZONA - Counts of *Spanogonicus albofasciatus* and *P. seriatus* average 8-15 per 100 sweeps in south-east area. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSISSIPPI - Probably major pest of cotton in delta counties at present. Where satisfactory treatment program is being followed, populations drastically reduced and little or no economic damage noted. In fields not treated during past week to 10 days, populations and damage range up to heavy and severe. Counts range 0-39 per 100 sweeps. Excessive blasting of small squares noted in several fields, particularly in Lake Washington area in southern Washington County. (Merkl et al.). LOUISIANA - Averaged 15 per 100 sweeps in cotton in Tensas Parish and 10 per 100 sweeps in field of cotton in Avoyelles Parish, and 2 per 100 sweeps in another field. (Spink).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Counts per 100 sweeps during past week averaged as follows in untreated fields: Central area, 20-30; southwest area, 10-20; southeast area, 8-12. Counts in central and southeast counties have not changed greatly from previous week. In Yuma County, infestations increased, particularly in Yuma Valley and Roll areas. (Ariz. Coop. Sur.).

SAY STINK BUG (*Chlorochroa sayi*) - ARIZONA - Infestations averaged 4 per 100 sweeps in some Cochise County cotton fields. (Ariz. Coop. Sur.).

GARDEN WEBWORM (*Loxostege similalis*) - TEXAS - Heavy infestations in cotton in Wharton County. (Texas Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Light infestations appearing in some Pinal County cotton fields, particularly in Coolidge and Picacho areas. (Ariz. Coop. Sur.).

A LEAF ROLLER (Platynota stultana) - ARIZONA - Light to medium infestations present in some Maricopa County cotton fields. (Ariz. Coop. Sur.).

A PYRAUSTID (Noctuella rufofascialis) - CALIFORNIA - Light larval populations in cotton bolls in Niland, Imperial County. (Cal. Coop. Rpt.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Light infestations present in some Yuma and Pinal County cotton fields. (Ariz. Coop. Sur.).

SPIDER MITES - ALABAMA - Undetermined species causing light to moderate damage to cotton throughout Tennessee Valley and light infestations observed in St. Clair and Talladega Counties. (Grimes).

THRIPS - OKLAHOMA - Populations of Frankliniella sp. decreased in most fields checked and plants outgrowing effects of earlier feeding. Heavy damage still noted in some fields in Roger Mills County. (Okla. Coop. Sur.). TEXAS - Infestations generally decreased in areas where they had been causing damage. (Gaines).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - MARYLAND - Heavy tip injury in Scotch pine plantation noted at Guilford, Howard County. (U. Md., Ent. Dept.).

BUDWORMS (Choristoneura spp.) - MINNESOTA - C. pinus in fifth and sixth instars at Virginia, St. Louis County; feeding in Scotch and Norway pine plantation. C. fumiferana beginning to pupate along Lake Superior from Lutsen to Hovland. (Minn. Ins. Rpt.).

BARK BEETLES - Dendroctonus frontalis now spreading out of control in eastern TEXAS; has killed an estimated 8 million board feet of timber in recent months. Ips spp. developing in salvaged pulpwood in ice-damaged areas of northern LOUISIANA and southern ARKANSAS; threaten nearby weakened trees. (So. For. Pest Rpt., June 21).

BLACK PINE LEAF SCALE (Aspidiotus californicus) - WISCONSIN - Heavily infesting approximately 80 percent of natural and plantation jack pine on 2,000 acres in Polk County. (Wis. Coop. Sur.).

INTRODUCED PINE SAWFLY (Diprion similis) - MINNESOTA - Noted in third instar in Pine and St. Louis Counties. (Minn. Ins. Rpt.). WISCONSIN - Egg stage to mature larvae found in a white pine windbreak in Burnett County during period June 19-25. All trees examined were infested, but little evidence of defoliation was yet apparent as most larvae were in very early instars. (Wis. Coop. Sur.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - Has reappeared in western LOUISIANA, with future uptrends expected elsewhere. (So. For. Pest Rpt., June 21). DELAWARE - Larvae numerous and causing heavy feeding injury to several trees in northern New Castle County. (Burbutis, Mason). MARYLAND - Injuring Scotch pine at Guilford, Howard County. (U. Md., Ent. Dept.). MINNESOTA - Oviposition on jack pine observed in Carlton, Cass, Pine and St. Louis Counties. (Minn. Ins. Sur.). WISCONSIN - First-instar larvae noted in Columbia County, June 23. (Wis. Coop. Sur.).

PINE SAWFLIES (Neodiprion spp.) - MINNESOTA - N. pratti banksianae in third instar at Rutledge, Pine County. (Minn. Ins. Rpt.). WISCONSIN - Light infestation of N. nanulus found on isolated 20-acre red pine plantation in Rusk County; third and fourth-instar larvae causing little defoliation. Light infestation also reported from Oconto County, June 19-25. N. swainei ovipositing heavily on June 23 in 2,000-acre area of jack pine in Columbia County, even though first oviposition was reported June 7. Eggs now swelling, with hatching expected soon. (Wis. Coop. Sur.).

LARCH SAWFLY (Pristiphora erichsonii) - WISCONSIN - Eggs, mid and late-instar larvae reported from Washburn County, with all trees in a 20-acre stand appearing to be infested. Eggs reported from all stands examined in Washara County; approximately 90 percent of trees infested June 19-25. Moderate infestation reported on 20 acres of larch in Florence County June 24. (Wis. Coop. Sur.). MINNESOTA - Second and third instars observed in Pine, St. Louis, Carlton and Aitkin Counties. (Minn. Ins. Rpt.).

YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) - MINNESOTA - Mostly in third instar in Cook, Lake, St. Louis, Carlton, Aitkin and Koochiching Counties. Some tree mortality noted from 1959 feeding. (Minn. Ins. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - ILLINOIS - Adults active on trunk of dying elm in McLean County. (Ill. Ins. Rpt.). WISCONSIN - A total of 750 confirmed cases of Dutch elm disease have been reported, as of June 29. First cases were reported from McFarland, Dane County, and Spring Valley Township, Rock County, during the past week. A heavy flight of S. multistriatus was reported at Oshkosh on June 19. Both Hylurgopinus rufipes and S. multistriatus have been laying eggs in dead or dying elm wood. (Wis. Coop. Sur.)

ELM LEAF BEETLE (Galerucella xanthomelaena) - ILLINOIS - Larvae and pupae abundant on Chinese elms at Taylorville, Christian County; foliage seriously damaged. Adults just beginning to emerge. (Ill. Ins. Rpt.). OKLAHOMA - Medium to heavy populations noted on elms in El Reno, Chickasha, Purcell, Pauls Valley, Tishomingo and Lawton, in central and south central sections. Populations in these areas reported to be higher than at same time in 1959. Medium infestation reported on elms checked in Porum area, east central section. Heavy number of adults noted in central section and young larvae should appear in near future. (Lamar, Phelps, McLemore, et al.).

IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) - MASSACHUSETTS - First-generation adults remain active; some larvae still found but mostly mature. At least a partial second generation is expected. Some trees in Amherst have been badly damaged. (Wheeler, June 29).

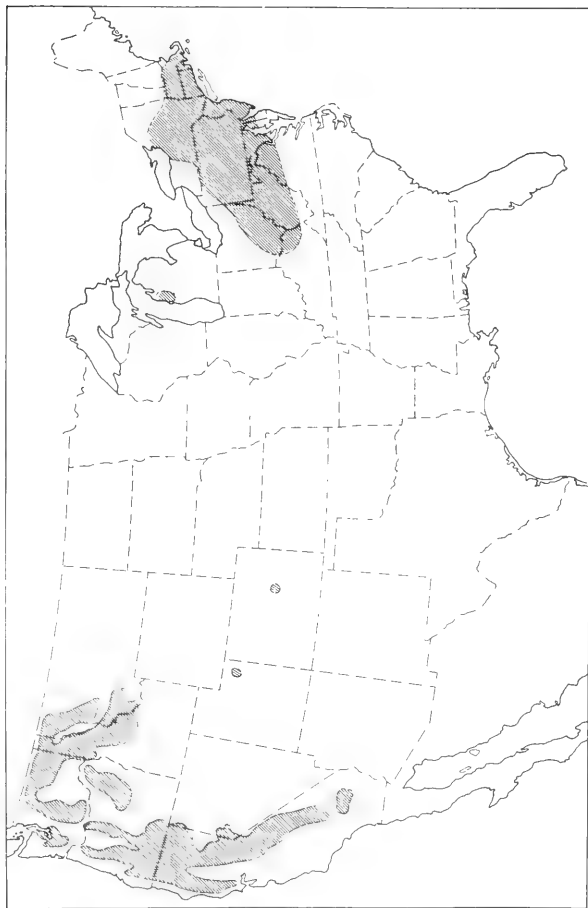
TENT CATERPILLARS (Malacosoma spp.) - NEW YORK - Egg laying, but Malacosoma spp. is extremely heavy on assorted vegetation in Westchester County. (N. Y. Wkly. Rpt., June 27). MARYLAND - Newly deposited egg masses of M. americanum common on wild cherry and apple trees over State. (U. Md., Ent. Dept.). M. disstria again defoliating hardwoods in ALABAMA and LOUISIANA; seriously weakening tupelo and gum trees on an estimated 500,000 acres. (So. For. Pest Rpt., June 21). OREGON - Adults of Malacosoma spp. began emerging in Willamette Valley week of June 24. (Larson).

LARGE ASPEN TORTRIX (Archips conflictana) - MINNESOTA - About 80 percent pupated at Hovland. Some moths emerged June 28. (Minn. Ins. Rpt.).

YELLOW-NECKED CATERPILLAR (Datana ministra) - SOUTH DAKOTA - Reported working on American elm trees in Sioux Falls, Minnehaha County. (Hantsbarger).

EUROPEAN ELM SCALE (Gossyparia spuria) - COLORADO - Crawlers active in Larimer County. (Colo. Ins. Sur.)

DISTRIBUTION OF GOUTY PITCH MIDGE (Retinodiplosis inopis)



Map reproduced from Forest Pest Leaflet 46,  
May 1960. Forest Service, USDA.



A KERMES SCALE (Kermes sp.) - OKLAHOMA - Heavy infestations on oaks noted in Muskogee, Bryan and Stephens Counties. (Washum, Robinson, Hatfield, Vinson, VanCleave).

BIRCH LEAF MINER (Fenusa pusilla) - MASSACHUSETTS - First-brood adults laying eggs; second-brood larvae emerging. (Wheeler, June 29).

BAGWORM (Thyridopteryx ephemeraeformis) - IOWA - Infestations in southeast area of State are at very low level after a 3-year period of intense damage to evergreens. (Iowa Ins. Inf., June 25). MISSOURI - Now hatching over State and growing rapidly in southern portion. (Wkly. Rpt. Fr. Gr.). OKLAHOMA - Heavy populations continue to be noted on some evergreens in south central area. (Phelps, McLemore, Perry). TEXAS - Heavy on cedars and evergreens in Comal, Hays, Caldwell and Guadalupe Counties. (Massey). ALABAMA - Causing severe damage to evergreen shrubs in Covington County. (Stephenson).

CATALPA SPHYNX (Ceratomia catalpae) - DELAWARE - Larvae common on catalpa trees in Newark area, New Castle County; causing moderate feeding injury. (Burbutis, Mason). MARYLAND - Mature larvae abundant on catalpa at localities in Prince Georges and Queen Annes Counties. (U. Md., Ent. Dept.). MISSOURI - Defoliating catalpa trees in Audrain County. (Munson, Thomas, Wood).

FALL WEBWORM (Hyphantria cunea) - DELAWARE - Infesting boxwood in Sussex County, June 22. (Burbutis, Mason). INDIANA - First-generation larvae in final instar in Franklin County; infestation light throughout State. (Schuder).

MIMOSA WEBWORM (Homadaula albizziae) - DELAWARE - Webs on mimosas becoming noticeable in several southern areas of State. (Burbutis, Mason). MARYLAND - Webbing becoming noticeable on mimosa and honeylucust in southern sections. (U. Md., Ent. Dept.). INDIANA - First second-generation adults laying eggs June 30 at Lafayette. (Schuder).

A GEOMETRID (Sabulodes caberata) - CALIFORNIA - Heavy populations of this species and a tortricid (Amorbia essigana) occurring on Dondeae in Anaheim, Orange County. (Cal. Coop. Rpt.).

NORTHERN MASKED CHAFER (Cyclocephala borealis) - MARYLAND - Newly emerged adults appearing in great numbers at lights in suburban Prince Georges County. (U. Md., Ent. Dept.).

ROSE CHAFER (Macrodactylus subspinosus) - NEW YORK - Appears to be quite numerous locally this year. (N. Y. Wkly. Rpt., June 27). NORTH CAROLINA - Injuring roses and grapevines throughout Watauga County. (PPC).

ROSE CURCULIO (Rhynchites bicolor) - CALIFORNIA - Damaging cultivated roses in Dutch Flat, Placer County. (Cal. Coop. Rpt.).

SPITTLEBUGS - COLORADO - Clastoptera arborina abundant on junipers in Fort Collins, Larimer County. (Colo. Ins. Sur.). INDIANA - Nymphal infestations of several species occurring in small to moderate numbers on arborvitae and red cedar. (Chandler).

A PYRRHOCORID (Largus cinctus californicus) - CALIFORNIA - Heavy populations on ornamentals in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

SCALE INSECTS - MARYLAND - Moderate infestation of Aspidiotus perniciosus noted on rose at College Park. (U. Md., Ent. Dept.). MICHIGAN - Crawlers of Unaspis euonymi abundant in East Lansing June 22. (Hutson). CALIFORNIA - A. degenerata heavy on camellia at Atwater, Merced County. (Cal. Coop. Rpt.).

A MEALYBUG (Eriococcus n. sp.) - FLORIDA - An apparently undescribed species was collected on dogfennel (Eupatorium sp.) at Zephyr Hills, Hillsborough County, on November 23, 1959, by L. B. Hill and W. T. Walsh. Det. by Harold Morrison. This may possibly be a new United States record. (Fla. Coop. Sur.).

FULGORIDS - KANSAS - Nymphs of unspecified species occurring on several ornamental species in Reno, Crawford and Riley Counties. (Gates, Smith, Peters).

A CRICKET (Oecanthus sp.) - TEXAS - Heavy infestations damaging mesquite trees and other plants in Lynn County; counts of 25 per tree were found. (Whitaker).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - NORTH CAROLINA - Aedes sollicitans active in Carteret County, but not biting in large numbers. (Ashton). MARYLAND - Aedes vexans annoying at Greenbelt, Prince Georges County; landing rate count was 1 per minute. (U. Md., Ent. Dept.). WISCONSIN - Mosquitoes continue to keep dairy cattle from grazing at night where herds not green fed are turned out to pasture at night. (Wis. Coop. Sur.). MINNESOTA - A total of 876 larval collections were made during period June 19-25, and were composed of the following species: Aedes vexans - 45 percent; A. trivittatus - 5 percent; Aedes spp., probably vexans - 21 percent; Culex festuans - 14 percent; Culiseta inornata - 30 percent. Nine additional species were found in small numbers. Total catch of 16 light traps during period June 12-18 was 41,900 female mosquitoes, and 16,000 during period June 16-25; catch has continued to decline since the latter date. A total of 781 mosquitoes were collected in 80 daytime field collections, of which 582 were A. vexans, 155 A. trivittatus, 25 A. cinereus and the balance, 5 additional species. Eighteen 15-minute collections at dusk totaled 463 mosquitoes, of which 277 were A. vexans, 165 A. trivittatus, 13 A. cinereus and the balance, 4 additional species. (Minn. Ins. Rpt.) SOUTH DAKOTA - Unspecified species continue extremely annoying in eastern part of State. (Mast). IDAHO - Undetermined species very abundant in Teton County. (Bishop).

FACE FLY (Musca autumnalis) - CONNECTICUT - Continuing survey reveals the species is widespread in the State on faces of cattle and in fresh dung. (Brigham). NEW JERSEY - Counts of flies, believed to be this species, were as high as 75 about eyes and nose of dairy animals in a central area herd. The dairyman reported a 20-percent loss in milk production. (Ins.-Dis. Newsl., June 28). INDIANA - Populations building up throughout central and eastern sections. Averaged 15 per beef animal in Upland area, Grant County. Fewer in central and western sections. (Dobson). Counts on cattle in St. Joseph and Marshall Counties ranged 1-26 per animal and 3-18 in Hancock County. (Matthew). ILLINOIS - Counts per animal in central area varied 0-17 and averaged 3.4 per animal. (Ill. Ins. Rpt.).

HOUSE FLY (Musca domestica) - INDIANA - Populations building up in Lafayette area in dirty barns; controls being applied. (Dobson). OKLAHOMA - Populations in Payne County area down and lower than those recorded at this time during 1959. (Howell).

HORN FLY (Siphona irritans) - LOUISIANA - Heavy on cattle in St. John the Baptist Parish. (Spink). OKLAHOMA - Populations have declined on cattle in Payne County area; averaged 500 per mature cow and 1,200-1,500 per bull. (Howell). MISSOURI - Heavy on both beef and dry dairy cattle. (Munson, Thomas, Wood). ILLINOIS - Varied 10-200 and averaged 66 per animal in central section. (Ill. Ins. Rpt.). NEBRASKA - Ranged 75-100 per animal in 4 small herds of Herefords in Lancaster and Johnson Counties. (Simpson). SOUTH DAKOTA - Averaged 52 per head on cattle in Cottonwood vicinity, Jackson County. (Mast).

STABLE FLY (Stomoxys calcitrans) - DELAWARE - Adults numerous and annoying at public beaches in southeastern Sussex County. (Burbutis, Mason). ILLINOIS - Counts per animal in central section varied 0-4 per animal; averaged 1.3. (Ill. Ins. Rpt.) OKLAHOMA - Populations continue to increase on cattle in Payne County area; counts ranged 2-15 per mature unsprayed animal. (Howell).

**TABANIDS** - LOUISIANA - Heavy infestations of Tabanus spp. reported on cattle and horses in St. John the Baptist Parish. (Spink). **INDIANA** - A few Tabanus spp. remain on animals. (Dobson). **ILLINOIS** - Counts of Tabanus spp. varied 0-1 per animal in central area of State. (Ill. Ins. Rpt.). **IDAHO** - Populations of undetermined species of deer flies increasing in abundance in Bingham County. (Bishop).

#### BENEFICIAL INSECTS

**LADY BEETLES** - WYOMING - Hippodamia sp. adults averaged 4 per 25 sweeps in alfalfa fields sampled in Goshen and Laramie Counties. (Fullerton). **NEBRASKA** - H. convergens numbers increasing; larvae and adults averaged about 1 per sweep. (Simpson). **MAINE** - Various species appear to have exerted an appreciable degree of control of aphids in some experimental potato plantings on Aroostook Farm at Presque Isle. Eggs began hatching toward the end of the week. (Shands). **SOUTH DAKOTA** - Small numbers of adults of unspecified species found on alfalfa and small grain in northeastern quarter of the State. (Mast). **OKLAHOMA** - Light to medium populations of H. convergens, 0.2-2 per sweep, noted in alfalfa; very common in grain sorghum checked in Tillman County; and becoming more common in cotton over the State. (Hatfield, Owens, Vinson, Stiles, Robinson, VanCleave).

**MELYRIDES** (Collops spp.) - WYOMING - Adults averaged 3 per 25 sweeps of alfalfa in Goshen and Laramie Counties. (Fullerton).

**NABIDS** (Nabis spp.) - WYOMING - Adults averaged 3 per 25 sweeps in each field of alfalfa sampled in Goshen and Laramie Counties. (Fullerton). **SOUTH DAKOTA** - Present in very small numbers on northeastern area alfalfa. (Mast). **OKLAHOMA** - Averaged 0.2-0.8 per sweep in alfalfa checked in State. (Hatfield, Owens, Vinson, Robinson, VanCleave).

**LACEWINGS** (Chrysopa spp.) - OKLAHOMA - Light numbers (up to 0.2 per sweep) in alfalfa surveyed, showing very little increase in numbers over counts of a month past. (Hatfield, Owens, Vinson, Robinson, VanCleave).

**A FLOWER BUG** (Orius insidiosus) - NEBRASKA - Populations increasing; averaged 5 per 10 sweeps in alfalfa. (Simpson).

**ALKALI BEE** (Nomia melanderi) - IDAHO - First emergence has occurred in Bingham County. (Bishop).

**PARASITES** - MAINE - Potato aphids, parasitized by unspecified species, first appeared on potatoes toward the end of the week of June 25 at the Aroostook Farm near Presque Isle. (Shands).

**A CINNABAR MOTH** (Tyria jacobaeae) - OREGON - Has completed a portion of its life cycle at a Linn County release site near Scio. At this location, where adults were released in early May (CEIR 10(20):389), a large colony of larvae was observed June 21. (Every, Ritcher).

#### MISCELLANEOUS INSECTS

**JAPANESE BEETLE** (Popillia japonica) - NEW YORK - Numerous turf diggings at Poughkeepsie showed a few adults June 21; first adult seen above ground June 24. Peak should occur in State first week in July. (N. Y. Wkly. Rpt., June 27). **NEW JERSEY** - Beetle buildup encountered in central section. Information and assistance requested from Mercer and Burlington Counties. Regulatory treatments being applied to planes and grounds at McGuire AFB. Buildup in northern and southern sections of State continues light. **PENNSYLVANIA** - Hazardous condition recognized at Philadelphia International Airport. Foliage spraying begun June 27.

All airlines began aerosoling baggage compartments June 29. One dead beetle found in cabin of jet plane on that date and one live beetle found in cabin of another plane, June 30. Very few adults observed or reported in State other than in Philadelphia area. Very few beetles observed at Pittsburgh airport June 30. Mass emergence is thought not to have taken place, even in Philadelphia area. This heavy emergence is expected within a few days. DELAWARE - Large numbers of adults have emerged over eastern portion of State. The New Castle airport was the site of a heavy flight; foliage spraying and dusting was initiated, as was aerosoling of planes. Only one beetle has been found during daily observations at Dover AFB; no regulatory action has been imposed. MARYLAND - At Friendship Airport, Anne Arundel County, foliage treatment and aerosoling of planes initiated. Infestation is heavy at Andrews AFB, with controls being necessary. (PPC). First adults of season at Frederick, Frederick County, noted on roses June 23. Adults causing homeowners in suburban areas considerable concern by feeding on roses, fruit trees and other preferred hosts, June 27-30. (U. Md., Ent. Dept.). VIRGINIA - Increased emergence reported throughout State. Heavy, spotted feeding, with foliage browning, reported in Campbell, Chesterfield, Dinwiddie, Hanover, Henrico, Nansemond, Norfolk, Prince George and Princess Anne Counties; some heavy feeding reported in eastern Washington County. Light infestation reported in Franklin, Henry, Pittsylvania and Roanoke Counties. Infestation none to light in spots in Accomack and Northampton Counties. Adults reported feeding on oats in field south of Lynchburg, Campbell County. At National Airport, Washington, D. C., no adults observed on the field to date. Daily observations were made, with intensive scouting of the field and surrounding area June 29 and July 1. WEST VIRGINIA - No heavy emergence reported; light emergence reported in Gilmer, Greenbrier, Hampshire, Kanawha, Mercer, Monroe and Summers Counties. NORTH CAROLINA - First adult of season emerged in Hendersonville-Ashville area June 22. Heaviest infestation ever seen in area causing severe injury to corn by feeding in whorls. (PPC). Adults swarming over yard in Forsyth County (Wright) and numerous in alfalfa in Transylvania County (Farrier). INDIANA - Adults present in Marion County, June 30, and in Newton County July 1. (Gould). SOUTH DAKOTA - A total of 94 traps are now set in the State, with railroad and air terminals being the chief locations. (Mast).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Adults first observed in flight in Marion, Wayne County, area on June 20. (N. Y. Wkly. Rpt.).

A PHYCITID (Acrobasis tricolorella) - OREGON - Blacklight collections indicate adults began emerging in Salem area week of June 24. (Goeden).

A PSYCHID (Apterona crenulella) - CALIFORNIA - Medium to heavy infestation in gardens and in forest fringe in Placerville, El Dorado County. Mud cases heavy in pine twig tips. This is the first record for this county. (Cal. Coop. Rpt.).

A TORTRICID (Epinotia emarginana) - CALIFORNIA - Heavy adult flights occurring in San Anselmo, Marin County. (Cal. Coop. Rpt.).

FLIES - MICHIGAN - A fungus, Empusa sp., readily found on flies occurring on muckland. (Hutson, June 28).

ANTS - MARYLAND - Winged forms of Camponotus pennsylvanicus observed in homes in Montgomery and Harford Counties, while winged forms of Tetramorium caespitum are alarming homeowners in 5 counties over the State. (U. Md., Ent. Dept.).

#### CORRECTIONS

CEIR 10(27):587 - GREEN CLOVERWORM (Plathypena scarba) should read (Plathypena scabra).

CEIR 10(27):598 - JUNIPER WEBWORM (Dichomeris marginella) should read (Dichomeris marginella).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta quinq.		Heliothis zea vires.	
<b>ALABAMA</b>								
Auburn 6/28			8			1	29	16
Crossville 6/28	1		3			4	4	
Fairhope 6/28		1				7	15	1
<b>ARKANSAS</b>								
Hope 6/23-29	45	5		19			117	
Fayetteville 6/23-29	19	10					37	
<b>FLORIDA</b>								
Quincy 6/20		4				1	7	
Gainesville 6/28							7	
<b>ILLINOIS</b>								
Urbana 6/24-30	861	22	6	216		9		
<b>INDIANA (Counties)</b>								
Lawrence 6/19-24	292	16	14	48		51	45	1
Tippecanoe 6/23-30	386	8	7	21		5	4	3
Vanderburg 6/23-29	48	8	4	47		2	1	8
<b>IOWA</b>								
Ames 6/18-24	202	6		12				
Ankeny 6/18-24	70	2		1				
Soldier 6/16-21	81	33						
Columbus Junction 6/15-23	345	74						26
<b>KANSAS</b>								
Garden City 6/22,25-27	64	65		12			32	
Hays 6/23-27	242	54		16			5	
Manhattan 6/23-29	1,761	191	28	143				48
Mound Valley 6/22-24	75	6		6			3	
Wathena 6/16-21,23	270	230		56			10	
<b>LOUISIANA</b>								
Franklin 6/27,29		4	7			3		8
Tallulah 6/24-7/1								9 5
<b>MARYLAND</b>								
Fairland 6/22-26	2	3				3	5	
<b>MISSISSIPPI</b>								
*Stoneville 6/24-30	24	37	87	6		22		53 10
<b>MISSOURI</b>								
Columbia 6/26-30	465	132	34	36			12	20
<b>NEBRASKA</b>								
Kearney 6/23-26	148	102		23			2	10
Lincoln 6/18-20, 28-29	1,729	38		53				41
North Platte 6/23-29	448	79	1	110				4 2
Scotts Bluff 6/16-22	30	18		130				1 4
<b>SOUTH CAROLINA</b>								
Charleston 6/20-26		5	103	4		3		33
Clemson 6/25-7/1	11	8	52	1		7	1	172 14

\* Two traps - Stoneville.

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quinq.	Heliiothis zea	vires.
TEXAS								
Brownsville 6/18-24		469	11		4	20	619	
Waco 6/24-7/1	28	72	57	64			485	1
WISCONSIN								
Waterford 6/21-27	30							
Janesville 6/21-27	42							
Middleton 6/21-27	27							
*Arlington 6/21-27	149	2		3				
*Theresa 6/21-27	72	4		4		1		
Oakfield 6/21-27	91							
Johnsburg 6/21-27	3					9		
Green Bay 6/21-27	16			2				
Fairwater 6/21-27	14							1
Ripon 6/21-27	14							
La Crosse 6/21-27	402			7				
Stevens Point 6/21-27	34	6						

\* Two traps - Arlington; 3 traps - Theresa.

NEW STATE RECORDS OF PESTS REPORTED, JAN. 1 - JUNE 30, 1960

Listed below are 32 pests that have been reported in the Cooperative Economic Insect Report since January 1, 1960, as new State records. The pests are listed alphabetically by scientific name, with the common name (common names approved by the Entomological Society of America in upper case), the state in which recorded and the CEIR page reference in volume 10 following in sequence. A similar list of this nature will be published early in 1961 and will include any new United States records, if any, recorded during 1960. There were no new United States records reported during the previous six-month period.

Scientific Name	Common Name	Page Reference in Volume 10	State
<u>Aceria celtis</u>	a hackberry mite	290	California
<u>Aceria mangiferae</u>	an eriophyid mite	13	Florida
<u>Aceria sheldoni</u>	CITRUS BUD MITE	14	Florida
<u>Adelphocoris lineolatus</u>	ALFALFA PLANT BUG	25	Kentucky
<u>Agathis pumila</u>	a braconid	570	Pennsylvania
<u>Agrotis malefida</u>	PALE-SIDED CUTWORM	526	California
<u>Bruchus brachialis</u>	VETCH BRUCHID	516	Nebraska
<u>Circulifer tenellus</u>	BEEF LEAFHOPPER	476	Hawaii
<u>Comperia merceti</u>	a brown-banded roach parasite	291	Missouri
<u>Dichomerus marginella</u>	JUNIPER WEBWORM	134	Florida
<u>Dolerus wanda</u>	a sawfly	327	Illinois
<u>Euborellia cincticollis</u>	an earwig	293	Nevada
<u>Eupelmus popa</u>	an eupelmid wasp	477	Hawaii
<u>Hyllobius radialis</u>	PINE ROOT COLLAR WEEVIL	334	Delaware
<u>Hypera meles</u>	a clover head weevil	13	Utah
<u>Hypera nigrirostris</u>	LESSER CLOVER LEAF WEEVIL	401	Louisiana
<u>Matsucoccus gallicolus</u>	a scale insect	531	Delaware
<u>Megachile rotundata</u>	a megachilid bee	337	Utah
<u>Miccotrogus picirostris</u>	CLOVER SEED WEEVIL	377	Utah
<u>Microphylellus modestus</u>	a mirid	474	Delaware
<u>Musca autumnalis</u>	face fly	97 411	Iowa Maryland

- Continued -

PEST		Page Reference	
Scientific Name	Common Name	in Volume 10	State
<u>Ornithonyssus sylviarum</u>	NORTHERN FOWL MITE	533	Arkansas
<u>Phorodon menthae</u>	a mint aphid	492	Virginia
<u>Phyllophaga profunda</u>	a May beetle	366	Florida
<u>Plectris aliena</u>	a scarabaeid	535	Florida
<u>Pseudococcus olivaceus</u>	a mealybug	471	California
<u>Scolytus multistriatus</u>	SMALLER EUROPEAN ELM BARK BEETLE	14	Texas
<u>Silvius pollinosus</u>	a deer fly	445	Nevada
<u>Tegeticula yuccasella</u>	a yucca moth	236	Wisconsin
<u>Tortrix cockerellana</u>	a tortricid	213	Nebraska
<u>Tuckerella pavoniformis</u>	a mite	72	Florida
<u>Zadiprion rohweri</u>	a conifer sawfly	158	Nevada





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**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

Some GRASSHOPPER controls being applied in California and New Mexico. (p. 639). EUROPEAN CORN BORER infestations increasing in corn in a number of states; heaviest in several years in Connecticut. (pp. 640, 664). BARLEY THRIPS high in west central Minnesota and larval counts 10-20 per stem in barley in North Dakota. (p. 643).

SWEETCLOVER WEEVIL damaging sweetclover in Minnesota, North Dakota and Utah. (p. 643). SPOTTED ALFALFA APHID light to severe in alfalfa in Imperial Valley of California and medium to heavy in areas of Arizona. (p. 644). Lygus counts high in alfalfa in Arizona and ranged 5-20 per sweep in Nevada. (p. 645).

APPLE APHID populations increasing from Maine to Michigan and APPLE MAGGOT active in Maine, Massachusetts, New York, Ohio, Michigan and Minnesota. (p. 648). In Florida citrus, TEXAS CITRUS MITE populations higher than previous years and CHAFF SCALE more widespread than during 9 years of record. (p. 650).

STRIPED CUCUMBER BEETLE becoming troublesome on cucurbits in a number of states. (pp. 653, 666).

First-generation BOLL WEEVIL becoming more numerous, generally. Some heavy infestations reported in Texas, and moderate infestations noted in central Alabama. (p. 654). BOLLWORMS generally light at present, but PINK BOLLWORM extremely heavy in parts of lower Rio Grande Valley of Texas. (p. 655).

SPRUCE BUDWORM was treated on 217,000 acres in Aroostook County, Maine, on June 16 and seriously defoliated 500,000 acres in northern New Mexico. (pp. 656, 666). Some noticeable FALL WEBWORM infestations reported in several states; and ELM LEAF BEETLE damage heavy on elms in area of Nevada; expected to be heavy in some areas of New Jersey. (p. 657).

FACE FLY numerous around eyes and muzzles of cattle in eastern and southeastern Iowa; increased in Illinois and Ohio; averaged 15-20 per animal in West Virginia; heavy, up to 50 per head, in Maryland; increased to annoying populations in New York, where over 1,000 found on one new-born calf; and was high in Vermont. (pp. 659, 660, 664). SCREW-WORM infestations reported in Bee and Live Oak Counties, Texas. HORN FLY increasing in New York, West Virginia, Nebraska and Utah. (p. 660).

CORRECTIONS (p. 663).

ADDITIONAL NOTES (pp. 664,666).

INSECT DETECTION: New state records reported were face fly in Missouri (p. 659), alfalfa borer in Kansas (p. 643) and Clivina impressifrons in Idaho (p. 642). New county records reported were southwestern corn borer in Jackson Parish, Louisiana (p. 641); alfalfa weevil in Albany, Rensselaer and Washington Counties, New York (p. 643); a clover weevil (Tychius stephensi) in Winnebago County and clover seed weevil in Ogle County, Illinois (p. 644); and face fly in Greene, Carroll and Crawford Counties, Iowa (p. 659).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 667).

NOTE - Scientific name of PEACH SILVER MITE is now Aculus cornutus. (p. 649).

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A PROGRAM AID, "Detect and Report Your Insect Enemies", is included with this report. Additional copies are available on request.

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Reports in this issue are for week ending July 8, unless otherwise indicated.

WEATHER OF THE WEEK ENDING JULY 11

Below-normal mean temperatures occurred this week in all parts of the Nation except over northern sections from the northern Great Plains to the Pacific Northwest and portions of California, and across the southern portions of the Gulf and South Atlantic States. Much of the country was under the domination of a very extensive area of high pressure for most of the week. Generally fair skies, little or no rain and cool temperatures, with many record-low minimum readings, prevailed in portions of the northern Great Plains, Middle West, and Northeast. These conditions, in those areas where moisture has been adequate or excessive, were ideal for fieldwork. Rapid progress accrued in many sections where wet fields have held up normal operations for the past month or longer.

Little or no rain and extremely warm temperatures, with 90° to over 100° maxima general in inland sections of the Pacific Northwest on several days, increased the fire hazard, dried ranges, and rapidly depleted soil moisture in that region. Somewhat cooler temperatures, with respect to normal, were recorded in the Plateau States, the northern Rocky Mountains, and the western edge of the northern Great Plains, as precipitation was again light or absent. Rain is now critically needed in most of Montana, where crops are burning. In other Western States several months of below-normal precipitation are showing effects on ranges. General soaking rains, centered on western Texas, eastern New Mexico, and portions of Colorado and Oklahoma, boosted late crop prospects and ranges tremendously. Areas of local flooding in the south plains of Texas developed as over 11 inches of moisture fell in the Plainview area during the week. Weekly amounts exceeded the maximum monthly records for July at several locations, some with 40 or more years of record, as totals of 4 to 7 inches were common in eastern New Mexico and Texas and 1 to 4 inches in the remainder of the area.

Seriously dry soil conditions continue in many places from southern Texas, Louisiana, and Mississippi through the South Atlantic States to Virginia, Maryland, and New Jersey. Scattered showers and thunderstorms dotted much of this region at times during the week and local totals of 2 to more than 5 inches were received. General soaking precipitation would, however, be most beneficial in many areas. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - CALIFORNIA - Camnula pellucida and Melanoplus bilituratus defectus heavy on rangeland at Rincon Springs, San Diego County; rangeland showing light population of Trimerotropis sp., probably suffusa, in Bishop area, Inyo County; and C. pellucida counts 25 per square yard on approximately 4,000 acres of rangeland in Coahuila Indian Reservation near Anza, Riverside County, and receiving controls. (Cal. Coop. Rpt.). Mixed broods of grasshoppers, 25-30 per square yard, occurring in Round Valley rangeland, Inyo County, and Oedaleonotus enigma 70 per square yard in Lake Isabella area, Kern County. (G. Harmon). M. devastator swarms invading hangers and air strips at Beale Air Base in Yuba County; interfering to extent that a 500-acre buffer strip was treated between base and adjacent rangeland. (R.M. Thompson). UTAH - C. pellucida again threatening pasture and some farm lands in Hayden-Neola area of Duchesne and Uintah Counties. (Knowlton). NEW MEXICO - Grasshopper populations of 25-30 per square yard reported in alfalfa near Los Lunas, Valencia County. Averaged 2-7 per sweep in alfalfa near Isleta and Sandoval-Corrales areas in Bernalillo and Sandoval Counties. Damaged alfalfa, flowers, young trees and garden plants in San Miguel County. Many treating with good results. (N.M. Coop. Rpt.). NEBRASKA - Roadside counts of grasshoppers, mostly M. bivittatus, average 30 per square yard at one stop in Franklin County. Light damage evident in margins of nearby field of alfalfa. Stages varied from third instar to adult. Counts in Phelps, Kearney, Harlan and Franklin Counties averaged 8 per square yard. (Simpson). NORTH DAKOTA - Scattered cropland infestations of grasshoppers ranged from threatening to severe near Brampton, Sargent County, and Oakes, Dickey County. Development ranged from first instar through adult. Counts averaged 50-60 per square yard. M. bilituratus appeared dominant in Sargent County and M. bivittatus in Dickey County. These infestations generally associated with soil bank areas. Several scattered field margin infestations reported in other eastern communities. Leaf stripping injury evident in some fields. A continuing hatch occurring in alfalfa and along roadsides where first cutting of hay was removed. M. femur-rubrum and M. bivittatus, first and second-instar nymphs, most numerous in some fields. (N. D. Ins. Sur.).

MINNESOTA - All areas observed, except Swift County, had light to noneconomic populations of grasshoppers. (Minn. Ins. Rpt.). WISCONSIN - In 2 Washburn County alfalfa fields having high egg counts last fall, nymphs of M. femur-rubrum averaged 20-30 per square yard on June 29; and in Pepin and Trempealeau Counties, 2 fields averaged 20 and 25 M. femur-rubrum on July 1. Of 8 Adams County fields, 2 fields averaged 25 and the rest between 3 and 12 nymphs per square yard. Newly hatched and second-instar nymphs, when present, ranged 1-3 per sweep in recently cut alfalfa between Fond du Lac and Dane Counties. (Wis. Coop. Sur.). MISSOURI - Infestations of M. differentialis observed in southwestern counties where dry conditions exist. Infestations confined mostly to marginal rows of corn in small creek bottom fields; counts 6-50 per square yard in infested areas. In Boone County, counts 0-10 per square yard in fields (averaged 2-3) and 0.5-10 in field margins (average 5); species present were M. bilituratus (30 percent adults), M. bivittatus (all adults) and M. femur-rubrum. No adults of M. differentialis and only one adult of M. femur-rubrum found. (Munson, Thomas, Wood). ILLINOIS - Grasshopper nymphs, mainly first instar but some second and third instars, varied from 0-130, average 31, per 100 sweeps in grassy roadsides in northern 2 tiers of counties. (Ill. Ins. Rpt.). MARYLAND - Unspecified nymphs averaged 1-8 per sweep on red clover and alfalfa in Howard County. (U. Md., Ent. Dept.).

MORMON CRICKET (Anabrus simplex) - UTAH - Present but scarce in Green Lake area of Daggett County. No outbreaks found elsewhere in Daggett and Uintah Counties to date. (Thornely, Knowlton). WYOMING - Infesting rangeland in Big Piney area. Infestations vary from 4 per square yard to 20 per square yard on 2,500 acres. (Spackman).

SUGARCANE BORER (Diatraea saccharalis) - LOUISIANA - Less than one percent infestation of corn found in 8 fields examined in East Feliciana and St. Helena Parishes. (Spink).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NEW YORK - First-brood larvae, all instars, active in whorls, tassels, stalks and ears of sweet corn in Hudson Valley. Plants infested ranged from about 5 percent in treated corn in Ulster County to 90 percent in check rows in Dutchess County. Infestations heavier than a year ago in Columbia County; all stages found on corn, with about 75 percent of plants having borers in emerging tassels. (N. Y. Wkly. Rpt., July 5).

MARYLAND - Second-generation moth emergence from potatoes and weeds continues on Eastern Shore. First-generation larval infestations range light to heavy on advanced field corn in Prince Georges, Howard and St. Marys Counties. (U. Md., Ent. Dept.).

DELAWARE - Larvae reached fifth instar in field corn throughout State. (Burbutis, Mason).

NORTH CAROLINA - Thirty percent of cornfield infested in Caldwell County on June 24. (Jones). Eight borers found in one stalk and first generation nearing last instars in Caldwell County on June 28. (Jones, Farrier).

ILLINOIS - Egg masses averaged 44.7 per 100 plants, with average of 88.2 percent hatched, on corn 33-65 inches in height (average 49) in northern 2 tiers of counties. From 0-70, average 27.9 percent, of plants showed fresh whorl feeding, with an average of 2.4 borers per infested plant. Larvae were 68.2 percent first instar, 18.2 percent second instar and 13.6 percent third instar. Pupation in East St. Louis ranges 20-50 percent, which is approximately 10 days later than normal. (Ill. Ins. Rpt.).

MISSOURI - Larvae range second to fourth instar in northeast area, with pupation occurring in southeast area; moth emergence expected during week ending July 16 in southeast. (Munson, Thomas, Wood).

IOWA - Activity heavier than expected in relatively few tall, vigorously growing corn fields in all areas. In eastern area, leaf feeding present in 50-75 percent of plants 36 inches high or taller. In Boone County, egg masses per 100 plants averaged 8, with range 0-30; 4 percent of plants show leaf feeding. At Ankeny, 37 percent of plants in early planted fields show leaf feeding; and in Sioux County, quite a few moths are flying and tall corn is showing leaf feeding, but not up to 75 percent. (Iowa Ins. Inf., July 5).

MICHIGAN - Eggs at peak hatch at Paw Paw, Lansing and Grand Rapids on June 30. (Hutson).

WISCONSIN - Feeding now common, especially in advanced corn; but no treatments are warranted. Larvae per infested plant estimated between 1-4; most in first instar but some in second instar in southern counties. First egg masses found in Theresa on July 5. (Wis. Coop. Sur.).

MINNESOTA - Egg hatch progressing quite rapidly in southern half of State. Peak egg laying occurred in southwest and south central districts. Number of first-instar larvae per 100 plants averaged as follows: Southwest 316, south central 165, central 1.13, and west central and east central, less than 1. Although average number of larvae per 100 plants is high in southwest district, mortality of first instar is high also. (Minn. Ins. Rpt.).

NORTH DAKOTA - Moth emergence beginning in southeast; a few egg masses observed on corn averaging 30 inches extended height. Egg masses in field of sweet corn near Fargo, Cass County, averaged 1 per 20 plants. (N. D. Ins. Sur.).

SOUTH DAKOTA - Average number of shot-holed plants and number of egg masses per 25 plants by counties reported as follows: Union, 4.50 and 1; Clay, 3.75 and 1; Yankton, 1 and 0; Bon Homme, 2.33 and 2.66; Hutchinson, 4 and 1.50; Turner, 2 and 2; Lake, 0.5 and 1.5; Minor, 2 and 4; Minnehaha, 0 and 2. Extended height of corn ranged 30-47 inches. (Mast).

NEBRASKA - Larval damage to corn 8-40 percent in Southern Crop Reporting District. Several reports and observations in other areas of State run up to 100 percent infestation. Treatment underway in many areas. Late-planted corn practically free of larval damage. (Simpson).

KANSAS - Ten percent of plants examined in corn fields in Miami County, east central area, show feeding damage. Examination of corn plants over 4 feet tall in Marshall County showed that leaf feeding damage ranged 5-70 percent. Average of 25 percent of plants showed damage. Most corn too small for oviposition. (Gates). Leaf feeding and whorl feeding damage averaged less than 10 percent for all corn in northeastern area. (Peters).

OKLAHOMA - Approximately 60 percent of first-generation larvae pupated in corn checked in Stillwater area. (Arbuthnot).

STALK BORER (*Papaipema nebris*) - KANSAS - Larvae present in corn plants only in outside 5 rows in Miami and Marshall Counties. (Gates).



SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - LOUISIANA - Pupae collected in corn in Jackson Parish. This is a new parish record. A field of corn in Webster Parish reported severely damaged. Adults collected in light traps in Claiborne Parish. (Spink). MISSOURI - Light infestations observed in some of extreme southwestern counties. Counts ranged 0-5 percent of corn plants infested. (Munson, Thomas, Wood). OKLAHOMA - More than 60 percent of first-generation larvae have pupated in corn checked in Stillwater area; moth emergence started. (Arbuthnot). ARIZONA - Light infestations present in central and southeastern corn and sorghum. Counts show an average of 10-15 percent of stalks infested in more heavily infested fields. (Ariz. Coop. Sur.).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Larvae found in sweet corn in Hudson Valley on June 27. No major flight or egg laying is expected until July 15. (N. Y. Wkly. Rpt., July 5). MASSACHUSETTS - Heavy deposition of eggs reported in Bristol County. (Crop Pest Cont. Mess.). NORTH CAROLINA - Feeding in whorls of corn in Caldwell County. (Jones, Neuzig). ALABAMA - Infestation 100 percent on sweet corn near Newton, Dale County, with infestation per ear light to heavy. (Banks, Arant). ILLINOIS - Larvae averaged 114 per 100 ears in untreated sweet corn in southwestern area. (Ill. Ins. Rpt.). IOWA - Eggs observed on fresh corn silks of early planted sweet corn at Ankeny, June 27. (Iowa Ins. Inf.). KANSAS - One cornfield in Miami County had over 30 percent of plants showing "ragworm" injury. Most corn showed a little injury, but less than in this field. (Gates). An average of less than 10 percent of corn showed leaf and whorl feeding in northeastern area. (Peters).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - LOUISIANA - Severe infestation on sugarcane in Louisiana State University Sugar Station. (Spink). ALABAMA - Caused severe damage to sorghum in Lee County. (Guyton).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - NORTH CAROLINA - Infesting late corn in Davie County. (Williams, Rabb).

BLACK CUTWORM (*Agrotis ipsilon*) - IOWA - Continues to damage corn. Specific reports received from Ida, Poweshiek and Benton Counties. (Iowa Ins. Inf., July 5). NORTH CAROLINA - Cut and injured 20 acres of corn in Pamlico County. (Stoval, Rabb).

SOD WEBWORMS - ALABAMA - Moderately infesting Bermuda grass in Mobile. (Seibels).

FALL ARMYWORM (*Laphygma frugiperda*) - LOUISIANA - Severely damaging millet in spots in East Feliciana Parish. (Spink).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NORTH DAKOTA - Noneconomic infestations continue in southeast and south central sections. High populations still present in some small grain fields; however, predators also abundant and crop development advanced which removes threat of serious injury. (N. D. Ins. Sur.). MINNESOTA - Appearing on corn in southern counties. (Minn. Ins. Rpt.). KANSAS - Less than 10 percent of corn examined in northeast had feeding in whorls and on developing tassels. (Peters). COLORADO - Colonies observed on corn in Weld County. (Colo. Ins. Sur.). UTAH - Generally light on corn in Box Elder and Weber Counties. Local damage noted in some barley fields in east Millard County. (Knowlton). NEVADA - Averaged 0-20 per sweep in barley fields in Churchill County, with lady beetles averaging 5-6 per sweep in same fields. (Parker). OREGON - Caused damage to barley during late June. Det. by L. M. Russell. (Every).

GREENBUG (*Toxoptera graminum*) - NORTH DAKOTA - Although present in all small grain fields in southeast and south central sections, no economic populations observed. Most small grains heading in the area and predator populations increasing rapidly. Field counts range 2-50 per 10 sweeps. Survey showed highest counts in oats, averaging 31 per 10 sweeps. (N. D. Ins. Sur.). MINNESOTA - General decrease occurring; predators increasing in many fields. Danger of this pest appears past. (Minn. Ins. Rpt.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - NORTH DAKOTA - Trace infestations general through east and south central sections. No particular increase observed over preceding week; least abundant of aphid species infesting small grain. (N. D. Ins. Sur.).

APHIDS - NEW YORK - Yellow dwarf virus disease of oats, transmitted by grain aphids, becoming very general throughout Ulster County. It would appear now that practically all fields should be cut for hay or silage as grain yields will be markedly reduced. (N. Y. Wkly. Rpt., July 5).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - NORTH DAKOTA - Infestations in small grains and flax average 2 per 10 sweeps. (N. D. Ins. Sur.). MICHIGAN - Counts low at Lake City, Stockbridge and Bay City. (Hutson).

A SPITTLEBUG (Tomaspsis bicincta) - KANSAS - Numerous on corn and adjacent weeds in Riley County. (Lawson).

STINK BUGS - NEW MEXICO - Extremely abundant, mostly Chlorochroa sayi, in wheat and barley fields in Torrance County. Damage severe where adequate controls not taken. Also a problem in small grain fields near Los Lunas, Valencia County. (N. M. Coop. Rpt.).

CHINCH BUG (Blissus leucopterus) - MISSOURI - Migrations from small grain to small corn and grain sorghum observed in southwest; some fields of small grain sorghum completely destroyed. (Munson, Thomas, Wood).

A FALSE CHINCH BUG (Nysius raphanus) - TEXAS - Medium infestation on grain sorghum in Uvalde County. (Prucia).

CHINCH BUGS - NEW YORK - Serious infestations on several lawns in Nassau County. (N. Y. Wkly. Rpt., July 5). GEORGIA - Heavy infestations on some lawns in Ft. Valley. (Snapp). ALABAMA - Blissus leucopterus insularis causing light damage to several St. Augustine grass lawns in Mobile. (Seibels). LOUISIANA - Infestations of B. leucopterus insularis remain extremely heavy on St. Augustine grass throughout southern half of State. Some light infestations reported as far north as Caddo Parish. (Spink).

CORN FLEA BEETLE (Chaetocnema pulicaria) - NEW YORK - Adults seem to be on increase at Poughkeepsie after a lull; this is probably a new brood. (N. Y. Wkly. Rpt., July 5). DELAWARE - Adults increased in field corn in New Castle County, causing light feeding injury. (Burbutis, Mason). NORTH CAROLINA - Ten to 20 per plant on sweet corn in Henderson County on June 28. (Chalfant).

A GROUND BEETLE (Clivina impressifrons) - IDAHO - Causing some damage to planted corn seed in southwestern area. (Scott, June 24). Previous specimens of this beetle have been determined by Stehr from Webb and Kendrick, northern area, in 1953 from collections made in 1951. These are the first records of this species in the State. (Manis).

DUSKY SAP BEETLE (Carpophilus lugubris) - DELAWARE - Adults numerous in European corn borer and corn earworm infested corn in Sussex County; counts as high as 40 per stalk. (Burbutis, Mason). NORTH CAROLINA - Infesting corn in Caldwell County. (Jones, Daugherty).

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - LOUISIANA - Larval populations ranged 28-256 per square foot in 26 fields of rice in the rice belt. (Spink).

CORN ROOTWORMS - NEBRASKA - Several reports of activity of unspecified species in corn in eastern and southern portions of State. (Simpson).

A CHAFER (Anomala undulata) - MISSOURI - Adults eating silks off corn in scattered fields throughout several southeastern counties. (Munson, Thomas, Wood).

HESSIAN FLY (Phytophaga destructor) - MINNESOTA - Reported in wheat in Wright and Meeker Counties; "white heads" reported from Blue Earth, Faribault and Jackson Counties, but no positive determination made of hessian fly in latter 3 counties. Hessian fly last reported in State in 1941. Previous to that, it was recorded in 1932, 1937, 1938 and 1939. It appears unlikely that this pest will be a major pest of grain this year. (Minn. Ins. Rpt.).

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Larvae present in most headed barley fields throughout eastern area and egg hatch underway in later fields. Larval counts in barley range 10-20 per stem. (N. D. Ins. Sur.). MINNESOTA - Populations quite high in west central district; counts 3-10 per head. Damage evident in some fields. Counts in northwest 0-1 per head. (Minn. Ins. Rpt.).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - NEW MEXICO - Up to 50 ant hills per acre present in certain areas in San Miguel County; lighter in other areas checked, with 8-16 hills on rangeland in Abbot area, Colfax County. (N. M. Coop. Rpt.).

GARDEN SYMPHYLID (Scutigerella immaculata) - IOWA - Collected from first year corn in Muscatine County by G. Mathern. Specimens previously sent in from Davenport, Scott County, in 1959. (Iowa Ins. Inf., July 5).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - First reports of damage in Larimer County corn. (Colo. Ins. Sur.).

ALFALFA WEEVIL (Hypera postica) - KANSAS - Specimens collected by Mr. P. H. Marvin, during week of April 24-30 in Cheyenne County, northwest area, identified by R. E. Warner as this species. This is the first positive confirmation of alfalfa weevil in the State. (Peters). COLORADO - Larval damage reported on second-cutting alfalfa in Larimer, Weld, Bent, Crowley and Otero Counties. (Colo. Ins. Sur.). WYOMING - Larvae averaged 4 per sweep in 12 alfalfa fields checked in Goshen, Platte and Converse Counties. (Fullerton). ALABAMA - Remains present in Lee County. (Guyton). DELAWARE - Adults averaged 5 per 10 sweeps in alfalfa in New Castle County during daytime and 51 per 10 sweeps in one field at night. (Burbutis, Mason). NEW YORK - Found for first time in Albany, Rennselaer and Washington Counties, and new areas of infestation also found in Saratoga and Delaware Counties. Second-brood larvae feeding fairly heavy on second-cut alfalfa approximately 12-15 inches high in Ulster County. (N. Y. Wkly. Rpt., July 5). OHIO - Surveys in Columbia, Jefferson, Belmont, Monroe and Washington Counties negative. (Treece, June 24). Search for this species in 4 river-bottom fields from Adams to Washington Counties negative. (Blair, July 1).

A CLOVER HEAD WEEVIL (Hypera meles) - LOUISIANA - Adults average 2 per 100 sweeps in white clover in East Carroll Parish. (Spink).

CLOVER LEAF WEEVIL (Hypera punctata) - ALABAMA - Reported numerous in Lee County near Auburn. (Guyton).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - MINNESOTA - New seedlings of sweet-clover in northwest district show a great deal of leaf feeding. (Minn. Ins. Rpt.). NORTH DAKOTA - Defoliation of seedling plants severe in many eastern fields. (N. D. Ins. Sur.). SOUTH DAKOTA - Counts noneconomic in yellow sweet-clover fields checked. (Mast). UTAH - Moderately damaging sweetclover foliage throughout Cache and Salt Lake Counties. (Knowlton).

CLOVER ROOT CURCULIO (Sitona hispidula) - UTAH - Light in northern area alfalfa. (Knowlton). MARYLAND - Newly emerged adults abundant on red clover at Fairland, Montgomery County. (U. Md., Ent. Dept.).

CLOVER SEED WEEVIL (Microtrogus picirostris) - ILLINOIS - Reported for first time in Ogle County. (Ill. Ins. Rpt.). WASHINGTON - Counts 3-4 per sweep in white clover seed field near Oakesdale, Whitman County, on June 30. (Johansen).

A CLOVER WEEVIL (Tychius stephensi) - ILLINOIS - Reported for first time in Winnebago County. (Ill. Ins. Rpt.).

A STRIPED BLISTER BEETLE (Epicauta sp.) - MISSOURI - Spots in soybean fields throughout State infested. (Munson, Thomas, Wood). DELAWARE - First adults of season found present in field of alfalfa in New Castle County. (Burbutis, Mason).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NEBRASKA - Adults more numerous; counts averaged 30 per 100 sweeps in several alfalfa fields in Southern Crop Reporting District, with females common. (Simpson). DELAWARE - Adults common in soybeans in Kent County, causing noticeable feeding injury. (Burbutis, Mason).

JAPANESE BEETLE (Popillia japonica) - MARYLAND - Adults moderately injuring alfalfa locally in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Adults remain present on all forage crops, with adult feeding injury beginning to show in soybeans. (Burbutis, Mason).

PEA APHID (Macrosiphum pisi) - OREGON - Building up in western area vetch fields, but not in numbers sufficient to cause economic damage. (Dickason). NEVADA - Averaged 150-500 per sweep in uncut alfalfa in southern Washoe County (Bechtel, Gardella, Lauderdale, Parker), and 5-50 per sweep in cut alfalfa and 300-500 per sweep in uncut alfalfa in Churchill County (Parker). NEW MEXICO - Generally light in Chaves and Eddy County alfalfa, with few fields being treated. (N. M. Coop. Rpt., July 2). Generally light in fields in Bernalillo, Sandoval, Valencia and Torrance Counties. (N. M. Coop. Rpt.). COLORADO - Moderately high populations present on second-cutting alfalfa in Larimer, Weld, Bent, Crowley and Otero Counties. Aphid predators building up. (Colo. Ins. Sur.). WYOMING - Averaged 8 per sweep in 12 alfalfa fields checked in Goshen, Platte and Converse Counties. (Fullerton). NEBRASKA - Populations decreased considerably since first cutting. Highest counts 150 per 10 sweeps, with average counts 75 per 10 sweeps. (Simpson). SOUTH DAKOTA - Heavy infestations observed in southeast corner of State. Counts estimated to be 150 per sweep in Clay and Yankton Counties. Some damage noted. Large numbers of lady beetles in same area. (Mast). MINNESOTA - Counts on alfalfa remain high in nearly all areas; counts per 10 sweeps are as follows: Southwest 65-300, south central 400-1,400, central 100-1,400, west central 3-2,000, northwest 40-60. Predator populations increasing but cannot keep pace with extremely high aphid numbers. (Minn. Ins. Rpt.). MICHIGAN - Threatening populations that were present on alfalfa prior to June 15 in Bay City, Benton Harbor and Monroe triangle have now subsided. (Hutson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - CALIFORNIA - Light to severe in alfalfa over Imperial Valley, Imperial County. (V. Roth). NEVADA - Averaged 4-15 per sweep in Churchill County. (Parker). UTAH - Remains moderate in southwestern Utah County. (Knowlton). ARIZONA - Infestations medium to heavy in many alfalfa fields throughout southwestern, central and Graham County area of southeast. Counts in Cochise County remain low, but increasing infestations indicated. (Ariz. Coop. Sur.). COLORADO - None recorded to date this year. (Colo. Ins. Sur.). MISSOURI - Light infestations in some southwest counties; counts ranged 0-8 per sweep in alfalfa. (Munson, Thomas, Wood). ALABAMA - Reported numerous in Lee County near Auburn. (Guyton). NEW MEXICO - Generally light in alfalfa in Chaves and Eddy Counties; few fields treated. (N. M. Coop. Rpt., July 2).

SWEETCLOVER APHID (Therioaphis riehmi) - NORTH DAKOTA - Heavy infestations in seedling sweetclover continue in eastern area. (N. D. Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Populations increasing steadily on alfalfa in central area; counts 6-10 per sweep common. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs present in soybeans and alfalfa over State. (Burbutis, Mason). OHIO - Both adults and nymphs numerous in Washington County field; second-growth alfalfa damaged. (Blair, July 1). Only one leafhopper per 10 sweeps found in Ashtabula County. (Holdsworth). Populations generally low in Columbiana, Jefferson, Belmont, Monroe and Washington Counties. (Treece, June 24). MICHIGAN - Counts low at Lake City, Stockbridge and Bay City. (Hutson).

LEAFHOPPERS (undetermined) - NEBRASKA - A field of alfalfa in Kearney County averaged 2,000 per 100 sweeps. (Simpson). WYOMING - Heavy infestations in some alfalfa in Yoder area; adults averaged 15 per sweep. (Fullerton).

LYGUS BUGS (Lygus spp.) - NEVADA - Averaged 5-15 per sweep in alfalfa in Churchill County and 10-20 per sweep in Reno-Sparks area, Washoe County. (Bechtel, Parker). ARIZONA - Populations high in alfalfa statewide; averaging 20-40 per 10 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Averaged about 8 per 50 sweeps in fields of alfalfa in Chaves and Eddy Counties; apparently causing only minor damage. (N. M. Coop. Rpt., July 2). Averaged 1 adult and 18-30 nymphs per sweep in Bernalillo County alfalfa; 2 adults and 14-26 nymphs in Los Lunas area, Valencia County; 1 adult and 11-19 nymphs in Isleta area, Bernalillo County; and 2 adults and 15-23 nymphs in Torrance County. (N. M. Coop. Rpt.). WYOMING - Adults averaged 4 per sweep in 12 alfalfa fields checked in Goshen, Platte and Converse Counties. (Fullerton). MINNESOTA - Counts per 10 sweeps were as follows: Southwest 1-4, south central 0-5, central 2-3, west central 1-25, northwest 0-1. (Minn. Ins. Rpt.). LOUISIANA - Averaged 36 per 100 sweeps in white clover in East Carroll Parish. (Spink).

TARNISHED PLANT BUG (Lygus lineolaris) - NEBRASKA - Counts averaged 80 per 100 sweeps in Southern Crop Reporting District. Highest count 150 per 100 sweeps. (Simpson). WISCONSIN - Adults common in southern 2 tiers of counties, but northwards, nymphs more common. Populations about half as numerous as alfalfa plant bug. (Wis. Coop. Sur.). DELAWARE - Adults and nymphs increasing in numbers on soybeans and alfalfa over State. (Burbutis, Mason).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Abundant in most alfalfa examined; counts in many southern area counties ranged 1-6 adults per sweep. (Wis. Coop. Sur.). MINNESOTA - Counts per 10 sweeps were as follows: Southwest 0-3, south central 0-16, central 1-20, west central 2-35, northwest 1-2. (Minn. Ins. Rpt.). SOUTH DAKOTA - Averaged 10 per 10 sweeps on alfalfa in southeast area; highest recorded count was 22 per 10 sweeps. No damage noted. (Mast).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - LOUISIANA - Averaged 27 per 100 sweeps in white clover in East Carroll Parish. (Spink). NEW MEXICO - Light in fields of seed alfalfa in Chaves County. (N. M. Coop. Rpt., July 2).

SPITTLEBUGS - OHIO - Considerable numbers present in legumes in Jefferson, Columbiana and Belmont Counties. (Treece, June 24).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Larvae averaged 5 per sweep on red clover at Barstow, Calvert County; moderate on alfalfa in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Larvae increasing on soybeans and alfalfa, with soybeans beginning to show light feeding injury. (Burbutis, Mason).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - NEVADA - Moderate to heavy on alfalfa in Fernley, Lyon County (York); averaged 1-3 per sweep in alfalfa in Churchill County (Parker); and averaged 6-12 per sweep in uncut alfalfa in southern Washoe County (Bechtel, Parker).

THRIPS - NEW MEXICO - Continue extremely abundant in alfalfa in Torrance County. (N. M. Coop. Rpt.). UTAH - Numerous in central area alfalfa. (Knowlton). ILLINOIS - Common in all corn fields, but no silvering observed. (Ill. Ins. Rpt.). DELAWARE - Sericothrips variabilis adults and nymphs numerous in many soybean fields over State, causing noticeable feeding injury. (Burbutis, Mason).

A SCARAB (undetermined) - INDIANA - Defoliating soybeans in Jasper, Porter, Cass, Miami and Marshall Counties. (Matthew).

A BEETLE (Colaspis sp.) - KANSAS - Present on soybean leaves in Cherokee County, southeast area; amount of damage not reported. (Gates). ILLINOIS - Adults averaged 75 per 100 foot of row in 2 St. Clair County soybean fields. (Ill. Ins. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - OKLAHOMA - Damaging foliage of soybeans in Tulsa and Muskogee County areas. (Howell).

CUTWORMS - GEORGIA - Light infestation on peanuts in Marion County; moderate to heavy in Irwin, Seminole and Dooly Counties. (Johnson).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - WISCONSIN - Adults caught in blacklight traps at Gays Mills and Middleton on warm nights the first part of week; egg laying may be continuing. Light to moderate populations of adults, eggs and larvae present July 1 in Door County; egg laying continues, larvae entering apples. (Wis. Coop. Sur.). MICHIGAN - Few larvae full fed in Benton Harbor-Paw Paw area. (Hutson). MISSOURI - Still no new entries reported from any area. However, half to full-grown larvae can still be found in apples in one unsprayed orchard in central area, although many are pupating. (Wkly. Rpt. Fr. Gr.). ILLINOIS - Day-old moth entries found July 6 in Carbondale area; peak hatch will probably occur following week. (Meyer). INDIANA - Period approaches for early hatch of another brood in Orleans area. (Marshall, July 5). OHIO - Infestations very light in northeastern area to June 30. (Cutright). NEW YORK - Populations being held down in Columbia County after early scare. Few fresh larval entries into fruit found in Clinton County June 27 and 28 and bait trap catches of adults have increased slightly in Niagara County due to favorable evening temperatures. In Monroe County, entries are a little more frequent and easier to find than during 1959. Entries were found in orchards in Wayne County sprayed June 29. (N. Y. Wkly. Rpt., July 5). MASSACHUSETTS - Period now between broods; few stragglers still emerging in late orchards or near storages. (Crop Pest Cont. Mess.) VERMONT - Heavy activity can still be expected with next warm night temperatures. (MacCollum, July 5). MAINE - Bait trap captures indicate continuing adult activity. Infestations and damage light to June 2. (Boulanger).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MISSOURI - Very few present, generally; however, some large larvae were found on unsprayed trees in central section. (Wkly Rpt. Fr. Gr.). ILLINOIS - Larvae one-third to half grown and infestations are generally light in Carbondale area. There was some increase in populations with present generation, but they are being controlled. (Meyer, July 6). WEST VIRGINIA - Second-brood moths emerging from apples in eastern panhandle. (W. Va. Ins. Sur.). NEW YORK - One rather severe first-brood infestation found on greening apples in northeastern Niagara County. (N. Y. Wkly. Rpt., July 5). OHIO - Moth emergence noted June 19; no hatching noted to June 30. (Cutright).

FRUIT TREE LEAF ROLLER (Archips argyrospila) - WISCONSIN - First adults of season present in Door County July 1; populations light to moderate. (Wis. Coop. Sur.). UTAH - Damage generally light this season throughout State. (Knowlton). OREGON - Adults reached peak of emergence in Salem week of July 3. (Goeden).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - MAINE - First-generation adults emerging. (Boulanger, July 2). WISCONSIN - Pupation underway in Door County, July 1; first adults have emerged. Moderate to heavy numbers of larvae and pupae reported in cherry orchards in same area. (Wis. Coop. Sur.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - NEW YORK - Few adults, apparently part of second brood, taken during week ending July 5 in Niagara County. (N. Y. Wkly. Rpt.). NEW JERSEY - Observed as being quite abundant during past week. (Ins.-Dis. Newsl., July 5). INDIANA - Hatch of another brood imminent on peaches in Orleans area. (Marshall, July 5). MISSOURI - Another brood beginning in southeast area; some partly grown larvae still found in terminals in central area. (Wkly. Rpt. Fr. Gr.). GEORGIA - Infestation in ripe peaches sufficiently heavy in one orchard at Ft. Valley to throw fruit out of grade. Other complaints of larvae in harvested peaches in same area. (Snapp).

APPLE APHID (Aphis pomi) - MAINE - Second-generation adults numerous. Injury to foliage becoming more apparent and widespread. (Boulanger, July 2). NEW YORK - Increasing rapidly in Columbia County and becoming a general nuisance on terminal and sucker growth in most Clinton County orchards. (N. Y. Wkly. Rpt., July 5). OHIO - Common in most orchards, but not serious to July 1. (Holdsworth). ILLINOIS - Populations persisting on water sprouts inside trees at Carbondale. (Meyer, July 6). MICHIGAN - Infestations building up at Grand Rapids, Paw Paw and Sparta. (Hutson).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Light, spotty infestations in apple orchards in Sandoval and Bernalillo Counties. (N. M. Coop. Rpt.).

APHIDS - WEST VIRGINIA - Populations of unspecified species on apples steadily increasing in eastern panhandle. (W. Va. Ins. Sur.).

APPLE MAGGOT (*Rhagoletis pomonella*) - MAINE - Emergence from apples began June 27 at Monmouth, Kennebec County. Emergence in blueberries began June 21, being heavy during period June 23-30. Emergence somewhat earlier than usual, with peak not yet clearly indicated. (Boulanger, July 2). VERMONT - Emergence expected by July 9-10. (MacCollum). MASSACHUSETTS - Adults abundant and active late last week and over weekend. (Crop Pest Cont. Mess., July 12). NEW YORK - Emergence increasing in Columbia County; first adults of season, only 2, taken in emergence cage July 2 in Niagara County. No emergence observed as of June 30 in Monroe County or July 1, in Wayne County. (N. Y. Wkly. Rpt., July 5). OHIO - First adults of season trapped in plum fruits June 29. (Holdsworth). MICHIGAN - First adults of season recovered July 5 at Lansing; search at Paw Paw and Grand Rapids July 1-2 was negative. (Hutson). MINNESOTA - The number one apple pest in the State has emerged from overwintering quarters. A recurrence of the severe damage encountered in 1958 and 1959 may again prevail if control measures are not taken. (Minn. Ins. Rpt.).

GREEN JUNE BEETLE (*Cotinis nitida*) - SOUTH CAROLINA - First adults of season noted in an apple orchard in Oconee County, June 25; numerous in Oconee and Pickens Counties. (Nettles et al.).

EUROPEAN RED MITE (*Panonychus ulmi*) - NEW YORK - Mostly under control in Columbia County, but noted as building up in an untreated prune orchard in Niagara County, July 1. (N. Y. Wkly. Rpt., July 5). OHIO - Infestations light, but increasing. Other orchard mites also light. (Cutright). ILLINOIS - Population on Red Delicious apples at Carbondale averaged 80 mites and 70 eggs per leaf on top centers of trees and only 18 and 70 on bottom leaves. This population will appear to explode in a little more than a week when the eggs hatch and development reaches the adult stage. (Meyer, July 6). MISSOURI - Present in southeast and west central sections, but no heavy infestation has been reported. (Wkly. Rpt. Fr. Gr.). WISCONSIN - Low populations reported in Door County as of July 1. (Wis. Coop. Sur.).

FOUR-SPOTTED SPIDER MITE (*Tetranychus canadensis*) - ILLINOIS - Gradually building up in Carbondale area; will be at optimum conditions in 2-3 weeks. (Meyer, July 6).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - NEW YORK - Populations increasing in Columbia County, but still few in numbers. (N. Y. Wkly. Rpt., July 5). INDIANA - Building up rapidly on apples in Orleans area. (Marshall, July 5). MISSOURI - No heavy infestation has been reported, although species is present in southeast and west central area. (Wkly. Rpt. Fr. Gr.). COLORADO - Building up on cover crops in a few orchards in Mesa County. (Colo. Ins. Sur.).

SPIDER MITES - NEW MEXICO - Light to spotty infestations of *Tetranychus* spp. in orchards in Sandoval County. Several heavy infestations found in Bernalillo County apple orchards. (N. M. Coop. Rpt.).

PEACH TREE BORER (*Sanninoidea exitiosa*) - NEW YORK - Began emerging in early July in western area. Numerous in all types of stone fruit in Suffolk County. (N. Y. Wkly. Rpt., July 5). COLORADO - Adult emergence reaching peak. Spray date set for July 10 in Mesa County. (Colo. Ins. Sur.).

PEACH TWIG BORER (*Anarsia lineatella*) - CALIFORNIA - Light infestation of larvae in fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

CHERRY FRUITWORM (*Grapholitha packardii*) - WISCONSIN - Populations light to moderate in Door County as of July 1; adults still present in light trap catches. (Wis. Coop. Sur.).



PLUM CURCULIO (Conotrachelus nenuphar) - WEST VIRGINIA - First-brood injury to apples more evident than usual in eastern panhandle. (W. Va. Ins. Sur.). MISSOURI - Feeding punctures still occurring on plums in southeast. (Wkly. Rpt. Fr. Gr.). ILLINOIS - Populations have been light to July 6 in Carbondale area. (Meyer). MICHIGAN - Egg laying continues at Lansing and Paw Paw. (Hutson). WISCONSIN - Adults still laying eggs in Door County, July 1. (Wis. Coop. Sur.).

BLACK CHERRY APHID (Myzus cerasi) - OREGON - Appearing in a few poorly sprayed or unsprayed cherry orchards in Polk County. (Stephenson).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - CALIFORNIA - First adults taken in a Frick trap in eradication area at Mount Shasta, Siskiyou County, and in Weitchpec, Humboldt County. (Cal. Coop. Rpt.).

A SCALE INSECT (Lecanium sp.) - OREGON - Unusually abundant in some prune orchards in Clackamas County. (Stephenson).

NEGRO BUGS - MISSOURI - Unspecified species heavily infesting very tender extreme terminals of peaches in central section. Injury resulted in characteristic flagging, similar to that caused by tarnished plant bug. (Wkly. Rpt. Fr. Gr.).

A CICADA - UTAH - An unspecified species is extremely numerous in some areas southeast of Rich County and in parts of Daggett and Uintah Counties; causing considerable concern to some fruit growers and ranchers. (Thornley, Knowlton).

BUFFALO TREEHOPPER (Stictocephala bupalus) - MAINE - Egg hatching continuing in Monmouth area, Kennebec County. (Boulanger, July 2).

PEAR-SLUG (Caliroa cerasi) - UTAH - Damage to cherries generally moderate to date. Some ornamental foliage damaged in Logan. (Knowlton). OREGON - Infesting young cherry orchard in Marion County week of July 3. (Stephenson).

PEACH SILVER MITE (Aculus cornutus\*) - CALIFORNIA - Heavy adult population occurring on peach trees in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Early instar larvae defoliating some pecan trees in Pauls Valley area. (McLemore, VanCleave).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Heavy populations present on pecan, persimmon and other trees in northeast and east central areas. (Howell, Campbell, VanCleave). TEXAS - Considerable webbing noted on grapes in Motley County. (Texas Coop. Rpt.). ALABAMA - Completely defoliated persimmons throughout southern half of Mobile County and is moderately heavy on pecans in some sections. Damage is not increasing at present. (Seibels).

WALNUT APHID (Chromaphis juglandicola) - WASHINGTON - Wingless forms damaging walnuts in Yakima. (Landis).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Light populations in Frick trap in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

ROSE CHAFER (Macrodactylus subspinosus) - WISCONSIN - Adults numerous in a 10-acre vineyard in Marquette County, June 16. (Wis. Coop. Sur.).

CITRUS WHITEFLY (Dialeurodes citri) - LOUISIANA - Reported as heavily infesting satsumas in East Baton Rouge Parish. (Spink).

\* Keifer, H. H., 1959. Bur. Ent., Cal. Dept. Agr., Occasional Paper No. 1, Eriophyid Studies No. 27, page 5, May 8.

Citrus Insect Situation in Florida - End of June - Although PURPLE SCALE (Lepidosaphes beckii) activity has increased due to egg hatching, parasite activity is expected to keep populations low in all districts. FLORIDA RED SCALE (Chrysomphalus aonidum) activity increased and will continue upward until August; over 70 percent will be in young stages during July. Populations were low in June but will build up to average summer level by August. Highest activity is in Bartow, Ridge and upper east coast districts. The sharp rise in CITRUS RED MITE (Panonychus citri) activity during June will change to a decline in July. Population has now reached summer peak average level of previous years and will drop sharply after mid-July. High activity is present in Gainesville, upper east coast, Orlando, Indian River, Ridge and Bartow districts. CITRUS RUST MITE (Phyllocoptura oleivora) activity increasing; will generally move upward during July. Although statewide population is average at present, infestations vary greatly from grove to grove, and will become heavier and more numerous within next month. High activity present in Bartow, Ridge and west coast districts. TEXAS CITRUS MITE (Eutetranychus banksi) present in more groves and populations are higher than in previous years; decline is expected in July. CHAFF SCALE (Parlatoria pergandii) is more widespread (90 percent of groves) than during 9 years of record. Nearly all infestations are light at present. WHITEFLIES are generally less numerous than average, but adult populations are high in a few groves. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

General Forecast - July through September 1960 - PURPLE SCALE populations will hold near low levels recorded during 1959. FLORIDA RED SCALE infestations will be light during July and average during August and September; populations will vary greatly among districts and groves. CITRUS RED MITE populations will decrease sharply from mid-July until mid-September, then increase; will be slightly more abundant than usual during this period. Populations of TEXAS CITRUS MITE will remain higher than during previous years until mid-July, gradually decline to a low level at end of August and increase after mid-September. CITRUS RUST MITE will become general and more severe until the summer peak expected in mid-August; will be more prevalent on fruit than on leaves, but generally will not exceed normal abundance for this period. WHITEFLY infestations will be below average through August, then increase moderately in September. CHAFF SCALE will be more abundant than usual during next 3 months. BLACK SCALE (Saissetia oleae) and MEALYBUG populations will decline. (Simanton, July 1).

#### TRUCK CROP INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NEW YORK - Heavy on some tomato and present on potato plants in Niagara County. In Suffolk County, second-brood adults active. (N. Y. Wkly. Rpt., July 5). MASSACHUSETTS - Numerous and causing damage to potatoes in many fields in Connecticut Valley. (Crop Pest Cont. Mess.). NORTH DAKOTA - Adults heavy and defoliating home garden potato plantings at Rugby, Pierce County. (N. D. Ins. Sur.). WASHINGTON - All stages occurring in eastern area. Development of first brood interrupted by freeze May 21. (Landis).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Moderate, with moderate damage to potatoes and tomatoes in Penobscot County and heavy, with moderate damage to same crops in Cumberland County. (Boulanger, July 2). Only trace numbers of overwintered beetles still present on potatoes at the Aroostook Farm. (Shands). DELAWARE - Adults increased on potatoes in all counties, particularly New Castle. Injury moderately heavy in many fields. (Burbutis, Mason). UTAH - Caused light to moderate damage to Weber and Salt Lake County fields. (Knowlton).

TUBER FLEA BEETLE (Epitrix tuberis) - COLORADO - Trace numbers taken in sweep counts from late potato plantings in Weld County. (Colo. Ins. Sur.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MICHIGAN - Eggs numerous on peppers at Monroe. (Hutson). DELAWARE - First egg masses of second generation on peppers in Kent County and on potatoes in Sussex County. Larvae quite damaging to asparagus in Kent County. (Burbutis, Mason).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - NEVADA - Heavy, spotted infestations and damage to potatoes in Reno-Sparks area, Washoe County. (Gardella, Lauderdale). CALIFORNIA - Medium infestations damaging hop yards in Sloughhouse, Sacramento County, requiring immediate treatment. (Meredith, Taylor).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Egg laying on tomatoes in Arkansas Valley area; no larvae found. (Colo. Ins. Sur.). UTAH - Eggs not numerous on tomatoes in canning districts; 0-2 eggs per 100 leaves at present. (Broadbent, Knowlton).

APHIDS - VERMONT - Building up on some vegetable crops. (MacCollum, July 5). NEW YORK - Becoming a problem on tomatoes, potatoes and several other vegetables in Niagara County. Macrosiphum solanifolii and Myzus persicae have not multiplied seriously in Suffolk County. (N. Y. Wkly. Rpt., July 5). DELAWARE - M. persicae colonies building up on lower leaves of potatoes in New Castle and Kent Counties and on peppers in Kent County. (Burbutis, Mason). WISCONSIN - Macrosiphum pisi decreasing on peas in counties surveyed. (Wis. Coop. Sur.). COLORADO - Aphid populations, principally Myzus persicae, building up on potatoes grown for certification in Weld County. Infestation early compared with 1959. (Colo. Ins. Sur.). OREGON - Aphis fabae appearing on beans in Willamette Valley. (Morrison). WASHINGTON - Myzus persicae generally lighter than usual on potatoes in eastern area. (Landis).

Potato Aphids in Maine - Numbers still very light on potato foliage in untreated plots at the Aroostook Farm. Only 4.3 percent of plants infested (by 3-leaf method of count) compared with 1.4 percent the preceding week. POTATO APHID (Macrosiphum solanifolii) more than twice as common as BUCKTHORN APHID (Aphis nasturtii). Only trace numbers of FOXGLOVE APHID (Myzus solani) and no GREEN PEACH APHID (M. persicae) observed. (Shands).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adults moderate in untreated late potato plantings in Weld County. No eggs or nymphs recorded in leaf counts. (Colo. Ins. Sur.). WYOMING - Adults averaged one per 100 sweeps in 6 early potato fields in Goshen County. (Fullerton).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - WISCONSIN - Populations very light. It appears that there will be minimal problems in lettuce, celery, carrots and potatoes for 1960. (Wis. Coop. Sur.). COLORADO - Being taken in sweepings in Weld County potatoes. (Colo. Ins. Sur.).

A FLATID PLANTHOPPER (undetermined) - NORTH CAROLINA - Nymphs feeding on tomato and flower plants in Durham and Wake Counties. (Jones, Farrier).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - LOUISIANA - Infesting tomatoes and eggplant in East Baton Rouge Parish. (Spink).

A STINK BUG (Euschistus sp.) - LOUISIANA - Heavy on tomatoes and beans in East Baton Rouge Parish. (Spink).

LESSER BULB FLY (Eumerus tuberculatus) - WASHINGTON - Entering potato seed pieces in Yakima County. Damage moderate, especially in seed pieces planted in cold, wet soil. (Landis).

IMPORTED CABBAGEWORM (Pieris rapae) - MAINE - Heavy adult flight in Monmouth area. (Boulanger, July 2). VERMONT - Second brood present on cabbage and related crops. (MacCollum, July 5). WISCONSIN - Eggs numerous and hatching underway in cabbage in Dane County. (Wis. Coop. Sur.). ALABAMA - Larvae damaging crucifers in Lee County. (Guyton).

CABBAGE LOOPER (Trichoplusia ni) - VERMONT - Second brood present on cabbage and related crops. (MacCollom, July 5). ALABAMA - Larvae damaging crucifers in Lee County. (Guyton).

DIAMONDBACK MOTH (Plutella maculipennis) - ALABAMA - Larvae damaging crucifers in Lee County. (Guyton).

CABBAGE WEBWORM (Hellula rogatalis) - ALABAMA - Present on cabbage in Lee County. (Guyton).

CABBAGE MAGGOT (Hylemya brassicae) - MICHIGAN - First infestation of season found at Beulah on July 2. (Hutson).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW YORK - First market beans harvested in Ulster County; yield reduced by extensive feeding. Egg laying occurring in Livingston County; no hatch noted. (N. Y. Wkly. Rpt., July 5). MISSOURI - Causing much inquiry for control in west central area. (Wkly. Rpt. Fr. Gr.). COLORADO - Egg masses and larvae on beans in Severance area, Weld County; damage reported. Adults average 2-3 per 100 plants, with egg deposition beginning in Delta and Montrose Counties. (Colo. Ins. Sur.). UTAH - Many complaints from Salt Lake, Weber, Box Elder, Cache and Emery Counties. (Knowlton). NEW MEXICO - Beginning to build up in Torrance County bean fields. (N. M. Coop. Rpt.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSOURI - Causing much inquiry for control in west central area. (Wkly. Rpt. Fr. Gr.).

BAGWORM (Thyridopteryx ephemeraeformis) - DELAWARE - Present and feeding on edge of lima bean field in Kent County. (Burbutis, Mason).

A THRIPS (Sericothrips variabilis) - DELAWARE - Common on lima beans in New Castle County. (Burbutis, Mason).

A NITIDULID (Meligethes nigrescens) - OREGON - Appearing on Benton County, June 3. (Arias).

BEET WEBWORM (Loxostege sticticalis) - UTAH - Adults generally present at lights, but rarely abundant in northern counties. (Knowlton). WYOMING - Larvae averaged 4 per 100 plants in 8 sugar beet fields checked in Goshen and Platte Counties. (Fullerton). COLORADO - Moth flights light in eastern counties. Larval numbers reduced from previous week in Larimer County and pupation observed in Montrose County. (Colo. Ins. Sur.). NEW MEXICO - A webworm, probably this species, almost completely defoliated about 30 acres of sugar beets in a field near Willard, Torrance County. Adults very abundant in alfalfa fields and in weeds along fence rows throughout major part of State. (N. M. Coop. Rpt.) NORTH DAKOTA - Moderate to heavy moth flights occurring in the Red River Valley. Egg laying observed in most Cass County sugar beet fields. Averaged 0-11 egg masses per 25 plants, with a few larvae present in scattered fields. (N. D. Ins. Sur.). MINNESOTA - Not found on sugar beets in Red River Valley. (Minn. Ins. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - NEVADA - Trace numbers found on sugar beets in Fallon, Churchill County. (Parker).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Averaged 7 per 100 sweeps in 2 fields of sweetpotatoes in East Baton Rouge Parish. (Spink).

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) - LOUISIANA - Averaged 22 per 100 sweeps in 2 fields of sweetpotatoes in East Baton Rouge Parish. (Spink).

GARDEN FLEAHOPPER (Halticus bracteatus) - NORTH CAROLINA - Injuring beans and sweetpotatoes in Davidson County. (Bernhardt, Farrier).

LEAFHOPPERS (Empoasca spp.) - LOUISIANA - Averaged 20 per 100 sweeps in 2 fields of sweetpotatoes in East Baton Rouge Parish. (Spink).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - MAINE - Heavy, and causing moderate damage to winter squash in Penobscot County. Moderate, with light damage to cucumbers and squash in Cumberland County. (Boulanger, July 2). NEW YORK - Exceptionally heavy in vines of squash in Oswego County. (N. Y. Wkly. Rpt., July 5). ILLINOIS - Abundant in home gardens in Champaign County and treatment necessary to save cucumber and pumpkins. (Ill. Ins. Rpt.). WISCONSIN - This species, along with Diabrotica undecimpunctata howardi, present over widely scattered sections which include some counties with large commercial acreages. Populations moderate, except for Milwaukee and Oconto Counties, where they are heavy. (Wis. Coop. Sur.).

SQUASH BUG (Anasa tristis) - MAINE - Light, with light damage to squash in Cumberland County. (Boulanger, July 2).

ONION MAGGOT (Hylemya antiqua) - MAINE - Moderate damage to onions in Cumberland County. (Boulanger, July 2). WISCONSIN - Injury in southeastern area light and only in spots skipped by treatment. Most have pupated. Control not as good on muck soil as on uplands. Some untreated Dane County home-garden onions severely damaged. (Wis. Coop. Sur.). NORTH DAKOTA - Severe injury in home gardens at Fargo. (N. D. Ins. Sur.). UTAH - Damaged onions in Weber County; home gardens and some commercial fields. (Knowlton).

ONION THRIPS (Thrips tabaci) - COLORADO - Increasing in Montrose and Delta Counties. In Prowers, Bent, Otero and Pueblo Counties, counts 5-20 per plant. (Colo. Ins. Sur.). UTAH - Moderately damaging in Davis and Weber Counties. (Knowlton). WEST VIRGINIA - Abundant on onion in Kanawha and Putnam Counties. (W. Va. Ins. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Increasing in Willamette Valley mint fields. (Morrison).

ALFALFA LOOPER (Autographa californica) - OREGON - Increasing in Willamette Valley mint fields. (Morrison).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Causing heavy damage to vegetable crops in Covington County, near Florala. (Stephens).

FLEA BEETLES - ILLINOIS - Abundant on many crops in home gardens in Champaign County. (Ill. Ins. Rpt.). NEVADA - Numerous and feeding heavily on plants in home gardens and Russianthistle in adjacent fields in northwest Reno, Washoe County. (Bechtel).

SPIDER MITES - WISCONSIN - Tetranychus telarius and Steneotarsonemus pallidus light in Door County strawberries. (Wis. Coop. Sur.). NEVADA - Tetranychus sp. heavy on beans in southern Washoe County, and light to heavy on raspberries in Reno, Washoe County. (Gardella, Lauderdale). OREGON - T. telarius appearing on beans in Willamette Valley. (Morrison).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - NEW YORK - In leaf stems of strawberries in Calverton area June 28. (N. Y. Wkly. Rpt.). ALABAMA - Causing heavy damage to vegetable crops in Covington County, near Florala. (Stephens).

STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) - NEW YORK - Infested several strawberry beds very severely in Monroe County. (N. Y. Wkly. Rpt., July 5). WISCONSIN - Light to moderate early instar larvae feeding on strawberry foliage in Door County. (Wis. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - WISCONSIN - Nearly mature in Door County strawberries. (Wis. Coop. Sur.). DELAWARE - Adults present on strawberries in New Castle County. (Burbutis, Mason).

TOBACCO INSECTS

BUDWORMS (*Heliothis* spp.) - MARYLAND - Moderate on early planted tobacco in Calvert and St. Marys Counties. (U. Md., Ent. Dept.). NORTH CAROLINA - Light on tobacco in Granville County. (Chamberlin). GEORGIA - Moderate to heavy on tobacco in Thomas, Colquitt and Berrien Counties. (Johnson).

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - Increasing, particularly on early planted tobacco; controls needed. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Adults abundant on early planted tobacco in St. Marys and Calvert Counties. Feeding on middle leaves common. (U. Md., Ent. Dept.). GEORGIA - Moderate on tobacco in Thomas, Colquitt and Berrien Counties. (Johnson).

TOBACCO HORNWORMS (*Protoparce* spp.) - NORTH CAROLINA - Light on tobacco in Granville County. (Chamberlin).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - MARYLAND - Heavy on tobacco at Sandgates, St. Marys County. (U. Md., Ent. Dept.).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - First-generation weevils present in Scotland County by July 3 in large numbers. (Cott. News Lett.). SOUTH CAROLINA - Weevils more abundant than at same time in 1959. (Cott. Lett., July 5). No overwintering weevils captured on flight screens during period, in Florence area. In general, emergence of hibernating weevils now over in area. First-generation weevils becoming more numerous. Lower temperatures and high rainfall presenting conditions which favor a buildup. In most early treated fields, infestations light. In some fields, where controls not started early enough, infestations running as high as 16 percent, and in untreated fields, as high as 29 percent. (Taft, Hopkins, Jernigan). GEORGIA - Square counts made in 30 southern area cotton fields, with a range of 0-51 percent punctured squares found; averaging 12 percent. (Johnson). ALABAMA - First-generation weevils emerging in central area; square infestations moderate. (Arant). TENNESSEE - Few weevils found north of southern tier of counties in western section. Square counts ranged 0-60 percent infestation, with heaviest counts in southeastern portion of cotton-growing section. Most fields inspected treated at least once. (Locke). MISSOURI - Total of 3 of 804 fields scouted infested; percent punctured squares ranged 0-8. (Munson, Thomas, Wood). ARKANSAS - Overwintering weevils present in pre-square cotton; recent rains contributed to late emergence. First-generation weevils emerging in early planted cotton. First-generation emergence not as general as expected, but if mean temperatures rise during week ending July 15, emergence will be general in later-planted cotton. Fewer fields infested than at same time in 1959 (52.0 percent, compared with 57.9 percent) but generally, where weevils are present, infestation counts higher. Grub kill in squares by parasites and high temperatures not as prevalent as during 1959. (Ark. Ins. Rpt.). MISSISSIPPI - First-generation emergence continues extremely light over delta counties. Infestations ranged 0-18 percent in inspected fields, with average infestation 1.9 percent. (Merkl et al.). LOUISIANA - Square infestation averaged 13 percent in Tallulah area. Some "hot spots" need controls. (Smith et al.). TEXAS - Populations continue to increase, with many sections reporting heavy infestations. (Gaines). Infestations averaged 47.4 percent punctured squares in 10 untreated fields and 28 percent in 50 early treated fields in McLennan and Falls Counties. (Parencia, Cowan, Davis). OKLAHOMA - Populations ranged 3-27 percent in cotton now squaring in east central area; control measures being applied in some fields. (Robinson, Taylor, VanCleave).

**BOLLWORMS (*Heliothis* spp., et al.)** - NORTH CAROLINA - Few reported in Scotland and Anson Counties. (Cott. News Lett.). SOUTH CAROLINA - Light to medium infestations seen in cotton fields in Florence area. (Taft, Hopkins, Jernigan). GEORGIA - Egg counts made in 30 southern area cotton fields, with a range of 10-71 eggs per 100 terminals found; averaging 36 per 100 terminals. Larval counts ranged 0-80 per 100 terminals; averaged 8. (Johnson). ALABAMA - Eggs and larvae decreased in central area. (Arant). TENNESSEE - Infestations vary widely in western area and are heavier in older cotton. Larvae more plentiful in treated fields. (Locke). MISSOURI - Total of 41 fields, of 804 scouted, infested with 0-2 eggs and 0-2 larvae per 100 terminals. (Munson, Thomas, Wood). ARKANSAS - Activity very light. Emergence of second-generation moths late, especially in upper Arkansas River Valley, and to a lesser degree in southeast and southwestern areas. Eggs difficult to find on cotton. Small-larval counts low. Percent infested fields was 30.5, compared with 35.2 at same time in 1959. (Ark. Ins. Rpt.). MISSISSIPPI - Old damage still reported from many fields in delta counties. Egg depositions dropped markedly and small larvae scarce. Large larvae pupated or will pupate soon. Another generation should appear between July 15-18. (Merkl et al.). LOUISIANA - Square infestation averaged 4 percent in Tallulah area, with damaged squares rather general. Eggs averaged 2.33 and larvae 2 per 100 terminals. Eggs and young larvae on a decline from previous week. (Smith et al.). TEXAS - Activity observed, especially in coastal bend and upper coastal areas. (Gaines). Activity increased considerably in McLennan and Falls Counties. Infestation averaged 8.2 eggs and 3.4 larvae per 100 terminals, with square injury averaging 1.5 percent, in 60 fields. Larval populations at injurious levels in several fields. (Parenica, Cowan, Davis). OKLAHOMA - Eggs noted in terminals of cotton plants in some fields in east central area. (Taylor, VanCleave).

**PINK BOLLWORM (*Pectinophora gossypiella*)** - ARIZONA - A single moth taken in a Plant Pest Control light trap in Cashion area, west of Phoenix in Maricopa County, on June 27. (Ariz. Coop. Sur.). TEXAS - Infestations extremely heavy in parts of lower Rio Grande Valley. (Gaines).

**CABBAGE LOOPER (*Trichoplusia ni*)** - CALIFORNIA - Light populations on cotton in Rosedale, Kern County. (Cal. Coop. Rpt.). OKLAHOMA - Occasional to light populations noted in some cotton fields in east central area. (Robinson, Taylor, VanCleave).

**BEE T ARMYWORM (*Spodoptera exigua*)** - ARIZONA - Light to medium infestations present in some Pinal and Yuma County cotton fields. (Ariz. Coop. Sur.).

**FLEAHOPPERS** - ARIZONA - *Spanogonicus albofasciatus* and *Psallus seriatus* infestations continuing to decline and now generally low in cotton, statewide. (Ariz. Coop. Sur.). NEW MEXICO - An unspecified black species averaged 14 per 50 sweeps in untreated fields of cotton in Chaves County. (N. M. Coop. Rpt., July 2). TEXAS - *P. seriatus* infestations increased and causing damage in many areas, following general rains. (Gaines). Infestation averaged 20.9 per 100 terminals in 60 fields checked in McLennan and Falls Counties. Infestations continue at injurious levels in many late-planted and some early planted fields which have not been recently treated. Many fields severely damaged in the area. (Parenica, Cowan, Davis). OKLAHOMA - *P. seriatus* light to medium, up to 20 per 100 terminals, in a few fields of late cotton in east central area. (Robinson, Taylor). MISSOURI - Total of 434, of 804 cotton fields scouted, infested with 0-13 per 100 terminals. (Munson, Thomas, Wood).

**PLANT BUGS** - TENNESSEE - Causing some light damage to young squares all over cotton-growing area and appear to be increasing. (Locke). MISSISSIPPI - *Lygus lineolaris* populations much lighter than previous week in delta counties; some localized damage reported near pastures, hay fields, etc. (Merkl et al.). ARIZONA - *Lygus* spp. counts about same as previous week. In some parts of southeast, a slight increase noted. Counts per 100 sweeps in untreated fields average as follows: Southeast, 10-15; central, 20-30; southwest, 10-30. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - GEORGIA - Light to moderate infestations on cotton in Stewart, Quitman, Early, Mitchell, Colquitt and Bleckley Counties. Heavy infestations in Berrien County. (Johnson).

SPIDER MITES - GEORGIA - Light to moderate infestations on cotton in Stewart, Quitman, Early, Mitchell, Colquitt, Berrien and Bleckley Counties. (Johnson). ALABAMA - Populations increased somewhat in central area. (Arant). ARIZONA - Infestations of Tetranychus cinnabarinus continue to increase in some Maricopa and Pinal County cotton fields. (Ariz. Coop. Sur.).

GRASSHOPPERS - TEXAS - Continue to be of concern. (Gaines). NEW MEXICO - Unspecified species very abundant in several cotton fields near Loving, Eddy County. Few growers have treated. (N. M. Coop. Rpt., July 2). ARIZONA - Heavy migrations of Schistocerca sp. damaging cotton along edges of few fields in Cochise County. (Ariz. Coop. Sur.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - General in northwest jack pine area; mature larvae predominant, but mid-instar larvae and pupae also present. Defoliation 50-80 percent in a few heavily infested stands in Washburn and Douglas Counties. Jack pine in Jackson County lightly infested, with pupae predominant; late-instar larvae and mating adults also present during period June 26-July 2. (Wis. Coop. Sur.).

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW MEXICO - Seriously defoliating mixed conifers on 500,000 acres in northern section of State. (N. M. Coop. Rpt.). OREGON - Adults began appearing in blacklight trap collections at Salem, week ending July 2. (Goeden).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - INDIANA - Pupation 50 percent in Green County; one empty pupal case found July 7. Parasitism heavy; approaching 50 percent in older plantings. (Schuder).

A PINE MOTH (Rhyacionia adana) - MICHIGAN - Larvae cocooning in Antrim County, June 22. (Hutson).

PINE TUSSOCK MOTH (Olene plagiata) - MINNESOTA - Light infestation on jack pine in a nursery at Willow River, Pine County. (Minn. Ins. Rpt.).

A DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa sp.) - NEW MEXICO - Controlled on 3,600 acres on west face of Sandia Mountains, week of June 19. (N. M. Coop. Rpt.).

ENGELMANN SPRUCE BEETLE (Dendroctonus engelmanni) - NEW MEXICO - Epidemic on several thousand acres in Rio Arriba County. (N. M. Coop. Rpt.).

A BARK BEETLE (Pityophthorus sp.) - WISCONSIN - Probably this pest, causing some top mortality in a 20-acre red pine plantation in Bayfield County; about 40 percent of trees infested and about 10 percent of branches and leaders affected. Adults and early stage larvae present, June 26-July 2. (Wis. Coop. Sur.).

WHITE-PINE WEEVIL (Pissodes strobi) - MAINE - Severe infestations and damage to pine in Cumberland County. (Boulanger, July 2). WISCONSIN - Mid and late-instar larvae light in white and jack pine in Wood County; about 10 percent of red and white pine weeviled in many northeast stands, June 26-July 2. (Wis. Coop. Sur.). MINNESOTA - Damage evident in 1960 and 1959 terminals in Carlton and Pine Counties. (Minn. Ins. Rpt.).

PINE ROOT COLLAR WEEVIL (Hylobius radicis) - WISCONSIN - One hundred percent of trees in a 40-acre jack pine-red pine plantation in Burnett County infested, with mid-instar larvae predominant. Late larval stages in Scotch and jack pine in Juneau County, June 26-July 2. (Wis. Coop. Sur.).



SARATOGA SPITTLEBUG (Aphrophora saratogensis) - WISCONSIN - Infestations generally light to moderate in northwest counties, but one 50-acre plantation in Douglas County showed counts high enough to need control during period June 26-July 2; nymphs mostly in mid-instars. Nymphs in same stage light in Wood County. An estimated 1,500 acres will require control in northeastern counties about last week in July. (Wis. Coop. Sur.).

PINE SAWFLIES - MINNESOTA - Diprion similis mainly in second and third instars in white pine; some scattered in jack pine in Carlton, Pine and St. Louis Counties. Neodiprion pratti banksianae in third instar at Willow River and Rutledge. (Minn. Ins. Rpt.). WISCONSIN - Early larval stages of N. pratti banksianae light in jack pine in Douglas County. (Wis. Coop. Sur.).

YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) - MAINE - Heavy infestation and damage on ornamental white spruce in Orono area, Penobscot County. (Boulanger, July 2). MINNESOTA - Fifth and sixth instars present in St. Louis, Cook and Carlton Counties. (Minn. Ins. Rpt.).

LARCH SAWFLY (Pristiphora erichsonii) - WISCONSIN - Eggs and early instar larvae on all trees examined in 10-acre stand in Douglas County and eggs through mid-instar larvae in heavily infested stand in Jackson County during period June 26-July 2. (Wis. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - NEW JERSEY - Active in many shade trees and shrubs. (Ins.-Dis. Newsl., July 5). RHODE ISLAND - Hatch observed in Warwick area. (Mathewson, June 29). DELAWARE - Causing noticeable feeding injury to sycamore in New Castle County and on sweetgum in Sussex County. (Burbutis, Mason). NEW MEXICO - Reports from many areas of State indicate heavy infestations on elm, poplar, mulberry, pecan and willow trees. (N. M. Coop. Rpt.).

ELM SPANWORM (Ennomos subsignarius) - NORTH CAROLINA - Pupation completed and adult emergence over 50 percent complete June 28 in Cherokee County. (Farrier).

MAPLE TRUMPET SKELETONIZER (Epinotia aceriella) - INDIANA - Damaging leaves of maples in Dubois County. (Giese).

MAPLE LEAF CUTTER (Paraclemensia acerifoliella) - INDIANA - Defoliating sugar maples in Dubois County. (Giese).

GYPSY MOTH (Porthetria dispar) - CONNECTICUT - Adults emerging at Windsor; first egg cluster observed July 1. (Phillips).

A TORTRICID (Archips fervidana) - NEW YORK - Feeding on oak at Riverhead, Suffolk County. (N. Y. Wkly. Rpt., July 5).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Caused rather extensive damage to unsprayed plantings of maple, linden, elm and ash; trees about 3 feet high. Sweet corn previously planted adjacent to these nursery blocks. (Ins.-Dis. Newsl., July 5).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEVADA - Damage has been extremely heavy to unsprayed elms, especially American elms, in southern Washoe County. Adults from first-brood pupae presently emerging. (Bechtel, et al.). UTAH - Damaging elm foliage in several sections of Salt Lake County. (Knowlton). OKLAHOMA - Heavy numbers of adults, as well as eggs and first to third-instar larvae, common on elms throughout central and south central sections. A fungus disease noted as killing larvae in Stillwater area. (Bieberdorf, Howell, Hatfield, VanCleave). KANSAS - Pupae averaged 1-2 per leaf in Ford County. Most individuals present as pupae; however, few adults ovipositing on June 30. (Thompson). NEW JERSEY - Will apparently be heavy in some areas this year. Many larvae have been noted in central section. (Ins.-Dis. Newsl., July 5).

TWIG PRUNER (Elaphidion villosum) - RHODE ISLAND - Causing moderate damage to oak in Saunderstown area. (Stessel, July 1).

ALDER FLEA BEETLE (Altica ambiens) - NEW MEXICO - Seriously defoliating alder at Bandelier National Monument. (N. M. Coop. Rpt.).

A COTTONWOOD LEAF BEETLE (Chrysomela scripta complex) - KANSAS - Counts of 2 adults per cottonwood leaf noted in Finney County July 1. Adults causing moderate to heavy damage, but larval skeletonizing is increasing. (Thompson).

A POPLAR LEAF BEETLE (Chrysomela sp.) - MINNESOTA - Eggs hatching and larvae are defoliating nursery poplars in southern districts. (Minn. Ins. Rpt.).

COTTONWOOD BORER (Plectrodera scalator) - NEW MEXICO - Adults emerging from cottonwood trees in most areas of State. Abundant in certain areas of De Baca, Eddy, Chaves and Dona Ana Counties. (N. M. Coop. Rpt.).

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora) - CONNECTICUT - Many willow trees browned by defoliation in northwestern section of State; second-brood larvae beginning to feed. (Schread). INDIANA - Heavy on poplar on soil bank land in Vigo County. (Schuder).

APHIDS - NORTH DAKOTA - Very heavy infestations of Eriosoma americanum on American elm continue in many areas of State. (N. D. Ins. Sur.). WYOMING - Mordwilkoja vagabunda heavily infesting poplars in Laramie area of Albany County. (Fullerton). WASHINGTON - Winged and wingless forms of an undetermined species attacking Norway maples at Yakima; infestation light, but increasing rapidly. (Landis). CALIFORNIA - Heavy infestation of Stegophylla quercicola present on oak in Tehachapi, Kern County. (Cal. Coop. Rpt.).

EUROPEAN ELM SCALE (Gossyparia spuria) - MAINE - Moderate infestation causing light damage to American elm in Old Town area, Penobscot County. (Boulanger, July 2). UTAH - Troublesome on many Salt Lake City shade trees. (Knowlton). NEVADA - Moderate to heavy infestations present in Elko, Elko County. (Del Curto).

A MARGARODID (Xylococcus sp., probably alni) - CALIFORNIA - Light on alder (Alnus sp.) in Gasquet, Del Norte County. Apparently a new record for the State. (Cal. Coop. Rpt.).

ELM LEAF MINER (Fenusa ulmi) - WISCONSIN - Moderate to heavy infestations on ornamental and roadside elms in Polk County; larvae in mid-instars June 26-July 2. (Wis. Coop. Sur.).

BIRCH LEAF MINER (Fenusa pusilla) - MINNESOTA - Second generation now attacking new leaves on birches in Minneapolis-St. Paul area and further south. (Minn. Ins. Rpt.).

LEAF MINERS - UTAH - Unspecified species causing conspicuous damage to quaking aspen foliage in parts of Logan Canyon. (Knowlton).

BAGWORM (Thyridopteryx ephemeraeformis) - MISSOURI - Heavily infesting many ornamentals in southeast area. (Wkly. Rpt. Fr. Gr.). OKLAHOMA - Heavy on some evergreens in Comanche County area. (Watson).

ARBORVITAE LEAF MINER (Argyresthia thuella) - MAINE - Infestation and damage heavy on arborvitae in Waterville area, Kennebec County. (Boulanger, July 2).

BOXELDER LEAF ROLLER (Gracilaria negundella) - NEVADA - Heavy infestations on boxelder in Elko, Elko County. (Del Curto).

LEAF ROLLERS - OREGON - Adults of Archips rosana very abundant in Willamette Valley. Larvae observed feeding on privet and adults reared from this host. Damage slight to this plant, however. (Every). ALABAMA - Unspecified species causing light damage to azaleas at Semmes, Mobile County. (Seibels).

A NOCTUID (Papaipema sp.) - CALIFORNIA - Heavy on Erechtites prenanthoides in Trinidad, Humboldt County. (Cal. Coop. Rpt.).

ROSE CHAFER (Macrodactylus subspinosus) - WEST VIRGINIA - Causing heavy damage to roses in scattered localities. (W. Va. Ins. Sur.). MINNESOTA - Active in area north of Twin Cities. Some feeding reported on soybeans. (Minn. Ins. Rpt.).

SHOT-HOLE BORER (Scolytus rugulosus) - CALIFORNIA - Heavy infestation in pyracantha in Arlington, Riverside County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - DISTRICT OF COLUMBIA - Thickly planted clump of pansies in shallow urn (about 1 foot in diameter) in a garden so heavily infested that plants were stunted; only few misshapen flowers developed. About 10 days later, practically all plants were dead. A similar urn of pansies a few feet away developed only a small infestation. (Leonard, May 16).

AZALEA LACE BUG (Stephanitis pyrioides) - MARYLAND - Causing heavy injury to untreated azaleas at College Park. (U. Md., Ent. Dept.).

A SPITTLEBUG (Tomaspsis bicincta) - KANSAS - Adults damaging leaves of redbud trees in Riley and Shawnee Counties. (Parker, Garwood).

A FULGORID - OKLAHOMA - Heavy populations of an unidentified species noted on wide variety of hosts, including elm, euonymus, privet, lantana, pecan, throughout north central, central and south central areas. (Howell, Goodhue, Shorter, VanCleave).

EUONYMUS SCALE (Unaspis euonymi) - MARYLAND - Severe on euonymus at several locations in central section. (U. Md., Ent. Dept.).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - UTAH - Troublesome on many shade trees in Salt Lake City. (Knowlton). WYOMING - Heavily infesting ornamentals in Goshen and Platte Counties. (Fullerton).

COCCIDS - CALIFORNIA - Eriococcus borealis populations heavy on Salix sp. in Yosemite National Park, Mariposa County. Pulvinaria sp., probably hydrangeae, medium on hydrangea in a nursery property in San Rafael, Marin County. Heavy infestation of Lepidosaphes tuberculata occurring on Cymbidium plants in a nursery in Vista, San Diego County. Lecanium corni complex heavy on Toyon in Placerville, El Dorado County. (Cal. Coop. Rpt.).

A LOCUST GALL MIDGE (Dasyneura pseudacaciae) - NEW YORK - Found on ornamental locust at Smithtown, Suffolk County. (N. Y. Wkly. Rpt., July 5).

A ROOT WEEVIL (Brachyrhinus sp.) - RHODE ISLAND - Girdled 60 percent of small grafted rhodendron plants in pots at a Cranston nursery. (Hansen, July 6).

A LUBBER GRASSHOPPER - ALABAMA - An unspecified species feeding on leaves of amaryllis; young nymphs causing light damage in Dog River area, Mobile County. Damage increasing as grasshoppers grow. (Arant).

#### INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - MISSOURI - Collected for the first time in State in Marion, Knox and Scotland Counties. Det. by C. W. Wingo. (Munson, Thomas, Wood). IOWA - Collected in Ames area on June 18 by Dr. W. S. Craig and in Boone County, June 15, by Nathan Austin. Found by Dr. J. L. Laffoon on wild parsnip flowers in Greene, Carroll and Crawford Counties on July 4. This is the most western report of the species in the State and in the United States. Large numbers of flies reported around eyes and muzzles of cattle in eastern and southeastern areas of State by Drs. John Herrick and Alan Raun, may be this species; counts ran 17-30 per animal. (Iowa Ins. Inf., July 2). ILLINOIS - Populations have increased during past 2 weeks and are expected to continue for

remainder of summer. (Ill. Ins. Rpt.). INDIANA - Observed on cattle in pastures in Tippecanoe, Clinton, Carroll and Howard Counties; counts ranged 1-12 per infested animal. (Matthew). OHIO - Populations built up considerably at Wooster during last days of June, averaging 40 per face on Herefords, with nearly as many on backs, June 30. (Treece). Numerous on beef animals in Auglaize County; 48 on face only. (Blair). Just beginning to build up in Ashtabula County. (Holdsworth). WEST VIRGINIA - Averaged 15-20 per head on untreated cattle, generally. (W. Va. Ins. Sur.). MARYLAND - Heavy, up to 50 per head, on dairy cattle at Ellicott City, Howard County. (U. Md., Ent. Dept.). NEW YORK - Increased through late June to annoying populations of 25-50 per head by end of month. Heaviest populations occurred in Greene and Orange Counties, with over 50 per cow by June 17-20. Populations were less than one per head on Long Island. One new-born calf, on pasture in Greene County, had over 1,000 flies over the still-wet body. (N. Y. Wkly. Rpt., July 5).

HOUSE FLY (Musca domestica) - UTAH - Becoming troublesome about many communities over State. (Knowlton). OKLAHOMA - Populations have declined slightly in Payne County area during past week. (Howell). SOUTH CAROLINA - Very abundant in Sumter area, June 20. (Nettles et al.). NEW YORK - Populations remained low, June 22, on Long Island, but were heavy in central portion of State and in Hudson Valley. (N. Y. Wkly. Rpt., July 5).

LITTLE HOUSE FLY (Fannia canicularis) - NEW YORK - Most abundant fly species in poultry houses in late June, particularly in Sullivan and Suffolk Counties. (N. Y. Wkly. Rpt.). DELAWARE - Very abundant in a garage in New Castle County. (Darsie).

SCREW-WORM (Callitroga hominivorax) - TEXAS - Several cases reported on livestock in Bee and Live Oak Counties. (Edgar).

FLIES - NEW MEXICO - Very heavy populations of unspecified species present around dairies, feed lots and corrals in Chaves County. (N. M. Coop. Rpt., July 2). OHIO - Flies swept from back of cow in wooded pasture, in Franklin County, were as follows: Horn fly - 28; house fly - 9; face fly - 5. Flies taken while resting on creep feeder proved to be house flies. (Holdsworth).

HORN FLY (Siphona irritans) - NEW YORK - Populations high in Greene and Orange Counties by June 17-20, over 100 per head being common. Populations in central area and on Long Island much lower. (N. Y. Wkly. Rpt., July 5). WEST VIRGINIA - Populations increasing on cattle, generally. (W. Va. Ins. Sur.). OHIO - Populations ranged up to 50 per animal at Wooster, June 29. (Treece). Ranged 50-200 per animal at Columbus July 2, and just beginning to build up in Ashtabula County, July 5-6. (Holdsworth). NEBRASKA - Numbers gradually increasing. Averaged 100 per head in 5 herds in Franklin and Harlan Counties; 1 Hereford bull in Franklin County had a count estimated at 2,000 flies. (Simpson). KANSAS - Ranged 50-1,500 per head (averaged 350 per head) on 129 cattle examined in Riley County. (Knapp). OKLAHOMA - Populations continue to decline on cattle checked in Payne County area. (Howell). UTAH - Annoyance to cattle increasing generally throughout State. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations continue to increase in Stillwater area; averaged 22 per animal on beef cattle checked in feed lot situations. Counts running higher than those noted at this time during 1959. (Howell).

A SYRPHID (Tubifera tenax) - CALIFORNIA - Maggots heavy in droppings under caged poultry in Rough and Ready, Nevada County. Condition associated with excess moisture. (W. A. Mitchell).

TABANIDS - UTAH - Unspecified tabanids troublesome to livestock and farm workers in Wellsville-Logan area, Cache County. (Knowlton). KANSAS - Tabanus atratus and T. lineola numerous in barns, cars and on cattle in Riley County; T. lineola was dominant species. (Knapp). OKLAHOMA - Heavy numbers, probably T. equalis,

present in favorable areas in northeast section. (Campbell, VanCleave). TEXAS - Heavy infestations of an unspecified horse fly attacking livestock in Bee, Live Oak and Jackson Counties. (Edgar, Wilson). OHIO - Tabanus spp. annoying cattle in Franklin County, July 2. (Holdsworth). DELAWARE - T. nigrovittatus very abundant and annoying in and near marsh areas. (Burbutis, Mason). SOUTH CAROLINA - Deer flies were very abundant on dairy cows about June 20. Horse flies now severely annoying to fancy show ponies at Bishopville. (Nettles et al., June 27).

MOSQUITOES - MARYLAND - Populations generally very light during week of July 4 in most sections. (U. Md., Ent. Dept.). MINNESOTA - Of a total of 719 larval collections made during period June 26-July 2, 448 contained Aedes vexans, 128 Culex restuans and 109 Culiseta inornata; a total of 12 species was collected. Total catch of female mosquitoes was 16,636. Although catches in several traps were high, most show a continuing decline in numbers collected. Over half the adults taken were A. vexans. (Minn. Ins. Rpt.). NEBRASKA - Populations of various species increasing and very annoying in most areas of eastern portion of State. (Simpson). TEXAS - Medium to heavy populations of unspecified species attacking man and livestock in Bee, Live Oak and Jackson Counties. (Edgar, Wilson). WYOMING - Unspecified species serious in Little Snake River area of Carbon County. (Spackman). UTAH - Unspecified species troublesome to livestock and farm workers in Wellsville-Logan area and causing moderate annoyance in Logan-Amalga area, both in Cache County. Very troublesome in Randolph-Woodruff area and in Allen Canyon, Rich County. (Knowlton). NEVADA - Aedes dorsalis and A. nigromaculis numerous and annoying in Sparks (Washoe County) and Stillwater (Churchill County). (Parker).

TICKS - MARYLAND - Dermacentor variabilis very abundant in weedy areas in southern counties. (U. Md., Ent. Dept.). ALABAMA - Rhipicephalus sanguineus has been relatively abundant on dogs in central section of State. (Arant). OKLAHOMA - R. sanguineus causing concern to some dog owners in Payne County area. (Howell). SOUTH DAKOTA - Otobius megnini reported infesting a herd of native cattle in Shannon County. (Hantsbarger). CALIFORNIA - Light population of Ixodes pacificus occurring in the Carlotta area of Humboldt County. (Cal. Coop. Rpt.).

CHIGGERS - ALABAMA - Unusually abundant in central portion of State. (Arant). LOUISIANA - Very abundant in Webster Parish. (Spink).

A SCABIES MITE (unspecified) - UTAH - A total of 25,000 cattle has been dipped for control of scabies in western Box Elder County since quarantine was imposed last April 25. At least 4,300 cattle were dipped at least twice. Only 2 herds were found to be infested and the infestation has been wiped out. The quarantine has been lifted. (Knowlton).

LARGE CHICKEN LOUSE (Goniodes gigas) - NORTH CAROLINA - Infesting chickens in Iredell County. (Myers, Farrier).

#### BENEFICIAL INSECTS

LADY BEETLES - NEVADA - Various species averaged 12-15 adults and/or larvae per sweep in alfalfa in southern Washoe County (Lauderdale); adults moving to grain fields from recently cut alfalfa in Churchill County (Parker). UTAH - Unspecified species have cleared up many rose and spirea aphid infestations. (Knowlton). WYOMING - Adults of Hippodamia sp. averaged 4 per 25 sweeps of alfalfa in each of 12 fields in Goshen, Platte and Converse Counties. (Fullerton). NORTH DAKOTA - Unspecified species averaged 1.4 adults per 10 sweeps and 1 larva per sweep in small grains throughout southeast and south central sections. (N. D. Ins. Sur.). SOUTH DAKOTA - Large numbers of Hippodamia spp. adults and larvae found in southeast area, where pea aphid population was high. (Mast). OKLAHOMA - Coleomegilla maculata heavy in corn fields checked in Stillwater area. Hippodamia convergens common in cotton fields in east central area. (Arbuthnot, Robinson, Taylor, VanCleave). NORTH CAROLINA - An unspecified species active on peas in Columbus County, June 24. (Garris).

MELYRIDES (Collops spp.) - WYOMING - Adults averaged 10 per 25 sweeps in each of 12 alfalfa fields in Goshen, Platte and Converse Counties. (Fullerton).

NABIDS (Nabis spp.) - WYOMING - Adults averaged 5 per 25 sweeps in each of 12 fields of alfalfa in Goshen, Platte and Converse Counties. (Fullerton).

LACEWINGS (Chrysopa spp.) - NORTH DAKOTA - Adults and larvae present in most fields of small grain in southeast and south central areas. (N. D. Ins. Sur.). OKLAHOMA - Eggs common in cotton fields checked in east central area. (Robinson, Taylor, VanCleave).

SYRPHIDS - NORTH DAKOTA - Larvae of unspecified species averaged 2.6 per 10 sweeps in small grain throughout southeast and south central areas. (N. D. Ins. Sur.). NEVADA - Larvae averaged 2-4 per sweep in several fields of alfalfa in Reno, Washoe County. (Bechtel, Parker).

A BRACONID PARASITE (Aphidius psivorus) - WASHINGTON - Reared from pea aphid at Union Gap, Yakima County. (Landis).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - VERMONT - Emergence prevalent in all infested areas. Adult feeding has caused severe injury to ornamentals in Fairless, Orange County. (MacCollum, July 5). RHODE ISLAND - Adults observed in North Providence and Smithfield, June 29. Complaints widespread by July 6. (Mathewson, Hansen). NEW JERSEY - Emergence increased considerably during past week in the State, with heaviest concentrations at points in Atlantic, Burlington, Mercer, Camden and Bergen Counties. McGuire AFB at Wrightstown and National Aviation Facilities Experimental Center at Pomona have been designated as hazardous; foliage sprays are being applied to supplement plane treatments at these fields. One commercial field (Teterboro Airport) at Hackensack was designated as hazardous, July 8. Planes at this field are being aerosoled prior to departure and foliage treatments are being applied. (PPC). NEW YORK - Adults present at Sayville June 30 and at Northport June 28. (N. Y. Wkly. Rpt., July 5). PENNSYLVANIA - Heaviest flights reported to date were in North Philadelphia, Bristol, Levittown and Cheltenham areas. Residents report heaviest adult populations in several years. There was a noticeable reduction in beetle flight at Philadelphia International Airport at noon, July 7. One of the heaviest infested areas during past several years has been the Greencastle-Waynesboro area, Franklin County. While the population is high this year, experienced personnel say it is less than in 1959. Adults remain scarce at Pittsburgh; considerable time was required to collect 5 adults on roses at the Airport, July 5. Emergence has barely begun in the Meadville and Erie areas in northern part of State. DELAWARE - Aerosol treatment of all cargo planes based at Dover AFB has begun on request. To date, no beetle flight has been observed at the field. MARYLAND - Friendship Airport remains number one problem; controls continue to be applied to foliage and to passenger and baggage compartments of all planes departing. Passengers are being inspected as they enter planes and traps are being used to attract beetles from loading ramps. All airline personnel have been requested to kill all beetles found inside planes. The infestation is rather general at Andrews AFB, with only a limited number of planes going outside the quarantine area. Heavy concentrations of beetles adjoin the field around golf course areas. Control requirements are in effect. (PPC). Continues to worry homeowners in suburban areas by feeding on rose, elm, dogwood and other ornamentals. (U. Md., Ent. Dept.).

VIRGINIA - Daily observations at National Airport indicate no hazard around ramp areas; approximately 65 beetles have been found west of the parking lots. No other fields in area have been declared hazardous. Reports from all sections show increased adult emergence; peak emergence may be expected during coming week

in most sections. Special attention has been given to airports, and reports show no heavy populations at any major commercial or military fields. Infestations remain none to light in Accomack and Northampton Counties. Medium heavy feeding is reported on beans in eastern Washington County and light feeding on corn in Goochland County. Light to heavy feeding, with spotted foliage browning, is reported from 24 other counties. WEST VIRGINIA - Emergence remains generally light throughout regulated sections; however, large numbers are beginning to emerge in Morgan, Berkeley and Jefferson Counties, with little feeding evident to date. Infestation at commercial airports remains light, with no hazard evident. (PPC). Emergence general; damaging roses and various other hosts. (W. Va. Ins. Sur.). NORTH CAROLINA - Large numbers feeding on rosebuds and leaves of willows in Cumberland County area; becoming more troublesome on these hosts in this area. (Jones, Farrier). SOUTH CAROLINA - Reported in York County; survey of bottom land areas in Spartanburg County shows distribution to be more extensive than during 1959. (Nettles et al.).

FILBERTWORM (Melissopus latiferreanus) - CALIFORNIA - Light infestation in seeds of Prunus armeniaca in La Grange, Stanislaus County. (Cal. Coop. Rpt.).

A SOD WEBWORM (Crambus mutabilis) - OKLAHOMA - Moths observed in heavy numbers in Stillwater area of Payne County. (Howell).

A CICADA (Tibicen sp.) - ARIZONA - Large numbers of migrating adults present around homes and on the desert in central and southeastern sections. (Ariz. Coop. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - RHODE ISLAND - Many complaints received regarding adults. (Mathewson, July 5). WASHINGTON - Adults entering homes in Yakima; more abundant than usual. (Landis).

FLIES - IOWA - Many observations of dead Hylemya sp. on terminal leaves and twigs; flies being killed by a parasitic fungus, Entomophthora sp. (Iowa Ins. Inf., July 2).

TERMITES - FLORIDA - Kalotermes snyderi collected in numbers at a residence in Citrus County, June 22, by A. Medlin. Det. by L. A. Hetrick. (Fla. Coop. Sur.). SOUTH DAKOTA - An undetermined subterranean species reported infesting several homes in east Sioux Falls, Minnehaha County. (Hantsbarger).

#### CORRECTIONS

CEIR 10(22):429 - SPOTTED ALFALFA APHID (Therioaphis maculata) - WASHINGTON - Occurrence of single specimen from Brownstown, Yakima County, was in error. Positive identification was received from L. M. Russell as a species of Sipha, probably agropyrella. This species lives on Gramineae and the specimen was probably accidental on alfalfa. (Telford).

CEIR 10(28):632 - Under FLIES - MICHIGAN - A fungus, Empusa sp., should read a fungus, Entomophthora sp.

ADDITIONAL NOTES

NEW YORK - APHIDS building up considerably in some orchards in Niagara County, increasing slowly in Orleans County and building up generally in Monroe County. CODLING MOTH (Carpocapsa pomonella) flight continued at moderate level, increasing rather sharply in lake zone of Niagara County. Eggs taking longer to hatch in Orleans County than anticipated. ORIENTAL FRUIT MOTH (Grapholitha molesta) second-brood flight increasing with rather heavy flight evening of July 8, in Niagara County. Second-brood RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) began appearing June 28; small but steady increase since then in eastern area. Started pupating in Niagara County. APPLE MAGGOT (Rhagoletis pomonella) emergence at Poughkeepsie declined during the week, but still a preponderance of females over males. It is doubtful if peak has been reached. Emergence very light in Niagara County and commenced in Monroe County July 6. MITES building up slowly in Orleans County orchards and CYCLAMEN MITE (Steneotarsonemus pallidus) heavy in some strawberry beds in Niagara County. STRAWBERRY LEAF ROLLER (Ancyliis comptana fragariae) very severe in some Monroe County strawberry plantings. EUROPEAN CORN BORER (Pyrausta nubilalis) first-brood larvae in tassels and ears mostly in later instars in Hudson Valley, though some second instars entering ears. Ear infestation 15-20 percent in untreated corn at Poughkeepsie and 1-3 percent in treated. Hatching rapidly in Niagara County vegetables. Outlook for CORN EARWORM (Heliothis zea) for July 10-16, in Hudson Valley, is for egg laying and hatching to continue at low level in sweet corn or decrease for a week or two, especially if coolness continues; but growers should expect mid-summer brood to increase egg laying in later July. APHIDS numerous on practically all vegetable crops not treated, in Niagara County. GREEN PEACH APHID (Myzus persicae) increasing but under control in Suffolk County potatoes. POTATO LEAFHOPPER (Empoasca fabae) causing yellows in Dutchess and Putnam County alfalfa fields. A TWIG PRUNER, probably Elaphidion villosum, causing concern in Nassau and Suffolk Counties. SPIDER MITES prevalent and damaging hemlock, cedar, azalea and pieris in Westchester County. LACE BUGS are also a problem. (N. Y. Wkly. Rpt., July 11).

CONNECTICUT - Heaviest first-brood EUROPEAN CORN BORER infestations noted in several years. Corn fields not regularly treated show nearly every tassel toppled over. Several minor infestations in tomato fields. (Minnun).

VERMONT - POTATO LEAFHOPPER building up slowly in some alfalfa fields in Chittenden County. TARNISHED PLANT BUG (Lygus lineolaris), ALFALFA PLANT BUG (Adelphocoris lineolatus) and other PLANT BUGS (Plagionathus spp.) exceptionally heavy in untreated trefoil seed fields. GRASSHOPPERS numerous in many fields. CODLING MOTH threat on apple still present, with moth emergence not yet complete in Shoreham area. EUROPEAN RED MITE (Panonychus ulmi) severe in one Addison County orchard. High populations of FACE FLY (Musca autumnalis) and STABLE FLY (Stomoxys calcitrans) remain present. HOUSE FLY (Musca domestica) a problem in untreated barns with accumulated manure, and JAPANESE BEETLE (Popillia japonica) still a problem on ornamentals. Adult CABBAGEWORMS laying eggs on all cole crops. (MacCollom).

CALIFORNIA - Populations of PACIFIC SPIDER MITE (Tetranychus pacificus) and EUROPEAN RED MITE heavy on a 140-acre almond orchard in Los Banos, Merced County. Insecticide resistance suspected, as control has been very poor. (Cal. Coop. Rpt.).

(Continued on page 666)



LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta quing.	Heliothis zea vires.
<b>ALABAMA</b>						
Fairhope 7/4	1				3	6
Auburn 7/1		2	1		2	10 1
<b>ARKANSAS</b>						
Hope 6/30-7/6	20	4		3		14
*Morrilton 6/23-7/6	203	169				159
Kelso 6/23-7/6	9	8		3		37
Fayetteville 6/30-7/6	11	5				53
<b>DELAWARE</b>						
Bridgeville 7/1-7					23	
<b>FLORIDA</b>						
Quincy 6/27					7	11
<b>ILLINOIS</b>						
Urbana 7/1-7	497	9	1	88	15	
<b>INDIANA (Counties)</b>						
Lawrence 6/27-7/2,4	310	17	22	38	21 10	1
Tippecanoe 6/30-7/7	189	8	4	17	3 4	2
Vanderburg 6/30-7/6	65	2	1	8	4	4
<b>IOWA</b>						
Ames 6/25-7/1	103	10		4		1
Ankeny 6/25-7/1	54	3				
Soldier 6/25-7/1	87	57		6		
<b>KANSAS</b>						
Garden City 7/1-4	140	70		28	1 7	1
Hays 6/28-30, 7/5-6	1102	86		146		
Manhattan 6/30-7/8	1106	144	16	79		3
Mound Valley 6/25,30, 7/5	180	5		25		1
Wathena 6/27,28	156	40				3
<b>LOUISIANA</b>						
Baton Rouge 7/1-7			93	4		10
Franklin 7/4,6		5	16		2	2
Tallulah 7/2-8			8			1 2
<b>MARYLAND</b>						
Fairland 6/27-7/1	3	5		2	3 7	
<b>MISSISSIPPI</b>						
*Stoneville 7/1-7	11	10	42	2	13	7
<b>MISSOURI</b>						
Columbia 7/2-8	529	75	24	32	3	3
Sikeston 7/2-8	4	2		2		4
<b>NEBRASKA</b>						
Scotts Bluff 6/23-29	50	19		39	1	4

\*Two traps - Morrilton; 2 traps - Stoneville.

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quing.	Heliothis zea	vires.
<u>NEW JERSEY</u>								
Sutton 7/4	16	1	4		1	3	3	
Traino 7/4	15	9	6		3	3	4	
<u>SOUTH CAROLINA</u>								
Charleston 6/27-7/3	1	1	72	1	22		5	3
Clemson 7/2-8	31	7	106	6	6		85	1
<u>TENNESSEE (County)</u>								
Blount 6/30-7/4	10	20		4	87	4	30	
<u>TEXAS</u>								
Waco 7/2-8	12	15	27	52			466	
<u>WISCONSIN</u>								
*Janesville 6/28-7/4	51							
Waterford 6/28-7/4	11							
Middleton 6/28-7/4	26			4				
*Arlington 6/28-7/4	122			4		2		
*Theresa 6/28-7/4	97							
Oakfield 6/28-7/4	63					2		
Green Bay 6/28-7/4	24					1		

\* Two traps - Janesville; 2 traps - Arlington; 3 traps - Theresa.

ADDITIONAL NOTES (Continued from page 664)

MAINE - APPLE GRAIN APHID (*Rhopalosiphum fitchii*) heavy, with moderate damage to oats in some Aroostook County areas. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) light, with light damage to potatoes in Washburn area, Aroostook County. EUROPEAN CORN BORER (*Pyrausta nubilalis*) eggs hatching July 9 in Monmouth area. STRIPED CUCUMBER BEETLE (*Acalymma vittata*) heavy on cucumbers and squash in Vassalboro area; moderate, with light damage, in Monmouth area. ROSE CHAFER (*Macrodactylus subspinosus*) moderate, with moderate damage to many hosts in Androscoggin and Sagadahoc Counties. Heavy, with severe damage on most hosts in Kennebec County. BIRCH LEAF MINER (*Fenusa pusilla*) heavy, with heavy damage to birches in Androscoggin, Sagadahoc and Washington Counties; severe over State to all birches. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) heavy, with severe damage to dogwood on University of Maine Campus. An ASH SAWFLY causing moderate damage to mountain ash in Cumberland County; severe in some cases. ELM CASEBEARER (*Coleophora limosipennella*) heavy on elm in York County, with damage moderate; and ELM LEAF MINER (*Fenusa ulmi*) moderate, with moderate damage on elm in Augusta area. ARBORVITAE LEAF MINER (*Argyresthia thuiella*) moth flights abundant from white-cedar in Sanford area, York County. PINE LEAF APHID (*Pineus pinifoliae*) caused severe browning and killing of 1959 growth by 1959 infestations on white pine in eastern and western areas. SPRUCE BUDWORM (*Choristoneura fumiferana*) treated on 217,000 acres in Aroostook County, June 16. First mortality checks show 97 percent reduction; area was severely infested, defoliated and browned. SAWYER BEETLES (*Monochamus scutellatus* and *M. notatus*) present on pine, spruce and fir logs exposed to sun; adult emergence from infested logs appears to be nearing end, about 2 weeks earlier than usual. EUROPEAN RED MITE (*Panonychus ulmi*) increasing, statewide; third-generation adults predominant; nymphal forms low, but high summer egg count noted. A STEM GALL (*Hemadas nubilipennis*) appearing on blueberry stems in Washington County. (Boulanger, Nash).

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported March 31 by the Plant Quarantine Division, ARS, USDA, are as follows:

A FRUIT FLY (possibly Dacus sp.) in orange in ship's stores from Mozambique at Savannah, Georgia, on February 3.

ORIENTAL FRUIT FLY (Dacus dorsalis Hendel) at Honolulu, Hawaii, destined for California on November 9 and January 2, respectively.

WHITE GARDEN SNAIL (Theba pisana (Muller)) with 2 lots of miscellaneous cargo from the Mediterranean area and destined for California, at New Orleans, Louisiana, on February 28.

Larvae of a CURCULIONID (Alcidodes sp.) in sweetpotatoes carried as food for an animal shipment from Liberia on February 4 at New York, New York.

A LEAF BEETLE (Lema melanopa L.) (a chrysomelid sometimes very significant on foliage of small grains in Europe, USSR and Siberia, and also occurring in North Africa) with a cargo of Convallaria pips from Denmark at New York on December 31, 1957, and with a cargo of rose bushes from England at Hoboken, New Jersey, on March 13, 1958.

A COSMOPTERYGID (Blastodacna atra (Haw.)) (a stem borer which is often an important pest of apples in Europe) in fruit in baggage from Turkey at Dover, Delaware, on December 30.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 25 times; at San Pedro, California, in baggage one time; at Honolulu in baggage destined for the mainland 6 times; at McGuire AFB, New Jersey, one time; at New York 14 times; and at Miami, Florida, 3 times.

A WEEVIL (Epicaerus sp.) in potatoes in baggage from Mexico on October 20, 1958, at Presidio, Texas.

CABBAGE WHITEFLY (Aleyrodes proletella L.) on Clematis in mail from England at Hoboken on November 9.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) twice in baggage from Mexico destined for California at Nogales, Arizona, on February 4 and 5, respectively.

A TERMITE (Coptotermes crassus Snyder) (an important termite in several Central American countries) in pine stump cargo destined for Georgia from British Honduras on February 18 at New Orleans.

MEXICAN FRUIT FLY (Anastrepha ludens) in baggage from Mexico destined for California at Nogales 2 times on January 3; at Tampa, Florida, one time in ship's quarters on February 13; and at Miami 2 times in airplane stores from Mexico on February 14 and 16.

KHAPRA BEETLE (Trogoderma granarium) 15 times; in stores at Honolulu one time; at Miami one time; at Seattle, Washington, one time; at Baltimore, Maryland, one time; at San Pedro 2 times; at New Orleans one time; at Mobile, Alabama, one time; and at Houston, Texas, 6 times; also once contaminating crude rubber cargo wrapped with used burlap at Houston.





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ECONOMIC INSECT  
REPORT

*Issued by*

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPER controls applied in Uintah and Sanpete Counties, Utah. (p. 671). CORN LEAF APHID becoming more abundant; some damaging infestations to grain crops reported. (pp. 672, 673). PEA APHID locally damaging to alfalfa in Idaho, Nevada, Utah, Colorado, Iowa and Wisconsin; some controls applied in Colorado and Wisconsin. (p. 674). WEBWORMS increasing in alfalfa in several Plains States. (p. 676). WESTERN YELLOW-STRIPED ARMYWORM damaging alfalfa in areas of California and Nevada and LESSER CORNSTALK BORER causing heavy damage to soybeans in areas of Alabama, Mississippi and Louisiana. THRIPS damage to peanuts reported in Alabama, Oklahoma and New Mexico. (p. 677).

First-generation BOLL WEEVIL populations continue to increase in cotton; some heavy infestations reported. (p. 683). BOLLWORMS increasing in some states and LYGUS BUGS increasing in southwest and central Arizona cotton. (p. 684).

BAGWORM damaging ornamentals and other plants in several states (p. 688) and JAPANESE BEETLE destructive to various plants in a number of Eastern States. Populations remain high at various places. (pp. 688, 691, 694).

MOSQUITOES troublesome in areas of Nevada, Utah and Wyoming. (pp. 688, 689). FACE FLY of concern to cattlemen in eastern Iowa and increased noticeably in northern Illinois. HOUSE FLY annoying in North Carolina, Alabama and Utah; and HORN FLY troublesome and of concern in Oklahoma and Utah. (p. 689). Infestation of a TROPICAL CATTLE TICK found in Florida; eradication program underway. (p. 690).

CORRECTIONS (p. 692).

ADDITIONAL NOTES (p. 694).

INSECT DETECTION: New state records reported were European chafer in New Jersey (p. 691), a bee mite (Acarapis dorsalis) in Connecticut (p. 692) and a weevil (Ceutorhynchus erysimi) in Missouri (p. 688). New county records reported were face fly in Polk County, Iowa (p. 689), alfalfa weevil in Logan County, Nebraska, and lesser clover leaf weevil in Perry County, Ohio (p. 676).

INSECTS not known to occur in the United States. (p. 695).

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Reports in this issue are for week ending July 15, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1960

The Weather Bureau's 30-day outlook for the period mid-July to mid-August calls for temperatures to average below seasonal normals in the northeast quadrant of the Nation, the Southern Plains and the Pacific Northwest. Above-normal averages are predicted for the Rocky Mountain States, the Northern Plains, and the Gulf Coast. In the remainder of the country, temperatures should not depart much from normal. Rainfall is expected to exceed normal in the North Atlantic States, the Southeast, the extreme Northwest, and the Southern Plains. Subnormal amounts are anticipated in the mid-West and far Southwest. In areas not specified, precipitation should be near normal.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING JULY 18

Continued hot and dry weather in most sections west of the Rocky Mountains, with over 100° heat general on several days as far north as eastern Washington, and below-normal readings with a few very humid days in the Great Plains, Middle West, and Ohio Valley States, where record low temperatures for the date occurred in Michigan and Wisconsin, were the main features of this week's weather. The temperature at Ely, Nevada, reached 97° on the 16th, the highest reading in July there, and 101° at Cedar City, Utah, on both the 17th and 18th, was the highest temperature in any month in a record of more than 50 years.

Precipitation remains below normal in the western half of the Nation, most of the interior of the Southern States, and in many areas from the western Great Lakes to the northern and western portions of the Great Plains. Most of the week's precipitation accrued from showers and thunderstorms in the usual localized hit-or-miss pattern. Good showers along coastal sections of the Gulf and South Atlantic States provided much needed moisture, ranging up to more than 5 inches in parts of southeastern Georgia and scattered areas of north and southwest Texas, and from 2 to 4 inches in the Carolinas, southern Louisiana, Mississippi, and Alabama. Moisture conditions in interior sections of the Southern States continued to decline, however, in hot sunny weather. Locally severe thunderstorms left 2.91 inches of precipitation in 1 hour at Keokuk, Iowa; 3.87 inches of moisture, with golf-ball-size hail, at Stillwater, Oklahoma; and scattered smaller but significant amounts in Colorado, Kansas, Nebraska, Missouri, Illinois, Wisconsin, and Minnesota. Generous showers totaling 1 to 3 inches for the week in portions of the Northeastern States relieved dry conditions in some areas which had received no precipitation in 10 days to 2 weeks. The combination of continued high temperatures and no precipitation in the Western States greatly increased the danger of forest and range fires, several of which broke out in the Pacific Northwest during the week. Moisture reserves are deficient in most areas of the West and grains in Montana are maturing too rapidly. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - CALIFORNIA - Medium infestation of Camnula pellucida in Alturas area, Modoc County; first economic damage since 1953 in area. (Cal. Coop. Rpt.). IDAHO - In Lemhi County, species principally C. pellucida, Melanoplus borealis and Psoloessa delicatula; Melanoplus oregonensis, M. bilituratus and C. pellucida in Valley County. Counts less than 1 per square yard, with development first instar to adult. In Washington County, counts generally less than 1 per square yard, with counts on conservation rangeland 1 per square yard and principally M. bilituratus, M. bivittatus and a few C. pellucida. Development first instar to adult. In area of Latah County, up to 10 M. bilituratus per square yard found; and in Boundary and Benewah Counties, C. pellucida, M. bivittatus, M. bilituratus and Bradynotes obesa ranged 1-8 per square yard in scattered areas. In Jerome County range areas, counts less than 1 per square yard; adults of Aulocara, Oedaleonotus enigma and M. bilituratus present. Controls believed necessary on 200 acres of alfalfa in Cassia County. Grasshopper hatch not believed complete; therefore, need for controls not known in anticipated control areas. (Evans, July 8). UTAH - Grasshoppers common but usually not damaging in Duchesne, Carbon and Uintah Counties; C. pellucida outbreak severe in Hayden area of Uintah County where one area of one and one-half square miles heavily infested, largely meadow hay lands; 9,000 acres of meadowland treated for C. pellucida in Sanpete County, with excellent results; outbreaks need control over 500 acres of rangeland near Bryce National Park and Cedar Breaks. (Thornley, Knowlton). COLORADO - M. bilituratus migrating in eastern Cheyenne County. (Colo. Ins. Sur.). TEXAS - Undetermined grasshoppers medium to heavy in pastures, forage crops, gardens and home lawns in Brazos and Tarrant Counties. (Texas Coop. Rpt.). Aeoloplides turnbulli bruneri counts 5-10 per square yard on rangeland in Fisher County. (Turney). OKLAHOMA - Grasshoppers light, 1-6 per square yard, on most pasture and rangeland in western half of State; causing local concern in many isolated areas throughout western portion. Some controls applied to crop margins in southwest. Dominant species M. differentialis, M. bivittatus and Brachystola magna. (Okla. Coop. Sur.). KANSAS - Counts ranged from less than 1 to 8 per yard in western area; dominant species M. bivittatus and M. bilituratus. (Peters) NEBRASKA - Several species of grasshoppers, mostly M. bivittatus, ran from less than one to 15 per square yard in Morrill, Scotts Bluff, Dawes, Box Butte, Sioux, Sheridan Counties, western area. As of July 15, only 6 areas in State show economic populations (Knox; junction of Custer, Logan and Lincoln Counties; Sherman; Scotts Bluff; Franklin; and along Wood River in Buffalo and Custer Counties). Dominant species M. bivittatus, M. bilituratus and M. differentialis. Rangeland areas without economic populations at present; dominant species Ageneotettix deorum, Amphitornus coloradus, Aulocara elliotti and Trachyrhachis kiowa. Populations not over 30 per square yard. (Bell).

SOUTH DAKOTA - Grasshoppers numerous in some spots in central area; counts 40 per square yard along roadsides and field margins, in soil bank land and cut alfalfa. Infestation very spotted, noneconomic at many locations. In Black Hills area, only economic infestation noted is in Elk Mountain range in Custer County. (Burge). NORTH DAKOTA - Threatening marginal infestations of cropland at scattered locations in McHenry, Bottineau and Rolette Counties; counts trace to 40 per square yard. Development ranged second instar to adult; majority in third and fourth instars. Dominant species M. bivittatus and M. bilituratus, about equal. (N. D. Ins. Sur.). WISCONSIN - Nymphs of M. femur-rubrum averaged from less than one to nearly 6 per sweep in alfalfa in La Crosse, Buffalo, Trempealeau, Pepin and Dunn Counties; 10 per square yard in Broadhead area of Rock and Green Counties. Counts 10 per square yard or less in Adams, Juneau and Monroe Counties. Hatching appears delayed; counts may rise soon. (Wis. Coop. Sur.). ILLINOIS - Grasshoppers, mainly first instar, averaged 256 per 100 sweeps in clover and alfalfa in eastern and central sections. In grassy roadsides, second and third-instar nymphs averaged 14.5 per square yard in central section, 6.9 in eastern section and about 5 in southeast. (Ill. Ins. Rpt.). INDIANA - Nymphs common along roadsides, fence rows and in field margins in many localized areas throughout State. Counts range to highs of 20 per square yard. (Matthew). OHIO - Nymphs numerous in alfalfa near Columbus. (Blair, Holdsworth). LOUISIANA - Orchelimum sp. damaging some

rice in Acadia, Jefferson Davis and St. Landry Parishes. (Spink).

EUROPEAN CORN BORER (Pyrausta nubilalis) - IOWA - Most important pest during week ending July 9; treatments warranted on much fertilized corn in most parts of State. Corn 60-70 inches high in Louisa, Muscatine, Washington, Keokuk and Poweshiek Counties had 52-88 percent leaf feeding with 52-774 borers per 100 plants. Larval development 60 percent first instar, 18 percent second, 18 percent third and 4 percent fourth; all feeding in whorls and leaf sheaths. Some heavy infestations, 75-90 percent of plants, in Sioux County and in Hudson-Traer area. Few egg masses still appearing in Boone County. (Iowa Ins. Inf., July 11).

MISSOURI - In east central area, larvae range from third instar to mature. In southeast, few second-brood egg masses noted. (Munson, Thomas, Wood).

NEBRASKA - Counts in Greeley and Howard Counties range 20-72 percent infestation; young larvae in leaf axils and entering stalks and midribs. (Simpson).

SOUTH DAKOTA - In east central area, 16 percent of plants "shot-holed" and egg masses 0.6 per 25 plants. (Mast).

WISCONSIN - Percentage of corn (3-5 feet tall) showing leaf feeding by counties was 3 in La Crosse, 29 in Trempealeau, 11 in Buffalo, 9 in Pepin, 3 in Pierce, 4.5 in St. Croix, 4 in Dunn, 3 in Chippewa, 4 in Waushara and 7 in Marquette. (Wis. Coop. Sur.).

MASSACHUSETTS - Infestations moderate to heavy; between broods at present. (Crop Pest Cont. Mess., July 18).

DELAWARE - Eggs of second generation hatching in corn in New Castle County. (Burbutis, Mason).

MARYLAND - First-generation infestations heavy in commercial early sweet corn in Carroll County; moderate in field corn in Howard County. (U. Md., Ent. Dept.).

STALK BORER (Papaipema nebris) - NORTH CAROLINA - Injuring corn in Cleveland County. (Earp, Farrier).

ILLINOIS - One out of 16 corn fields examined in eastern and central sections had 100 percent of plants damaged in marginal row, with 0-5 larvae per plant. (Ill. Ins. Rpt.).

OKLAHOMA - A borer, probably this species, causing concern to peanut growers in localized areas of Caddo County. (Okla. Coop. Sur.).

CORN EARWORM (Heliothis zea) - MASSACHUSETTS - Depositing eggs in Bristol County. (Crop Pest. Cont. Mess., July 18).

ALABAMA - Infestations 100 percent in corn in southeast area. (Grimes).

OKLAHOMA - Damaging grain sorghum in localized areas of Kingfisher County and corn in Noble County. (Okla. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Heavy infestations on several grasses in Mobile County; migration to grain sorghum and other crops in area expected in 1-2 weeks. (Knight, Harmon, Seibels).

OKLAHOMA - Mature larvae light in corn in Stillwater area. (Okla. Coop. Sur.).

ARMYWORM (Pseudaletia unipuncta) - NORTH DAKOTA - First larvae of season collected near Bismarck, Burleigh County, on July 7; infestation trace. (N. D. Ins. Sur.).

ILLINOIS - Larvae averaged 9.2 per 100 sweeps in grassy roadsides in eastern section and 1.3 in central section. (Ill. Ins. Rpt.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Heavy on heads of late grain sorghum in Victoria and Calhoun Counties. (Hawkins).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - NORTH CAROLINA - Numerous in cornstalks in Cleveland County. (Earp, Farrier).

CORN LEAF APHID (Rhopalosiphum maidis) - NEVADA - Heavy infestations in some grain fields in Washoe County. (Parker).

KANSAS - Appearing on sorghum in Finney County (DePew) and heavy on sorghum in Ottawa and Dickinson Counties (Gates).

NORTH DAKOTA - Infestations threatening to severe in late barley, averaging tiller to joint in development, throughout northeast and north central areas; counts 100-2,000 per linear foot of row. Predators, in general, averaged only a trace in late barley. Noneconomic infestations in barley advanced to shot blade or beyond in development, with predators generally abundant. (N. D. Ins. Sur.).

WISCONSIN - Migration to corn occurring in southern area. (Wis. Coop. Sur.).

OKLAHOMA - Heavy populations in field of grain sorghum in Craig County, medium to heavy on

Johnson grass and grain sorghum in Choctaw County and causing concern to some sorghum growers in Creek County. (Okla. Coop. Sur.). MISSOURI - Counts in corn in south central and southeast range 0-6 percent of stalks infested. In heavier infested fields, damage evident. (Munson, Thomas, Wood). INDIANA - Appearing in whorls of corn in southern half of State. Some fields show 15 percent plant infestations; however, counts less than 50 per infested plant. (Matthew). OHIO - Found in 2 fields in Perry County; 12 percent of plants infested. (Blair). ALABAMA - Spotted in corn in Henry and Houston Counties; more numerous in southern area than previously observed. Coleomegilla maculata fuscilabris and syrphid larvae keeping infestations under control. (Grimes). DELAWARE - Present on corn in New Castle and Kent Counties; first report of season. (Burbutis, Mason).

CHINCH BUG (Blissus leucopterus) - OHIO - Migrating from small grains to corn in Franklin and Allen Counties and damaging corn in Auglaize County. (Blair, Holdsworth; July 10). ILLINOIS - Very light on marginal row of corn in field bordering wheat in Champaign County; 20 percent of plants infested, with up to 7 adults and nymphs per infested plant. (Ill. Ins. Rpt.). MISSOURI - Few heavy infestations in marginal rows of corn in southeast. Counts range 50-300 per plant on infested plants. Infestations on large silking corn. (Munson, Thomas, Wood).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Damaged several thousand acres of wheat in Millard County; 2,500 acres treated this season. (Knowlton, Rickenbach). Some damage to barley and wheat in Uintah and Duchesne Counties. (Knowlton). NEVADA - Nymphs averaged 5-8 per 100 sweeps in Moapa Valley, Clark County, and 3-5 per 100 sweeps in Pahrump Valley, Nye County. (Bechtel, Zoller). NEW MEXICO - Stink bugs, mostly C. sayi, moderate to heavy in wheat in Quay County; treatments applied. (N. M. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Numerous on lower 2-3 leaves of corn in Larimer and Weld Counties and numerous in fence rows around corn fields in Mesa and Garfield Counties. (Colo. Ins. Sur.).

CORN BLOTCH LEAF MINER (Agromyza parvicornis) - DELAWARE - Present and active in field corn throughout State. (Burbutis, Mason).

CORN ROOTWORMS - NEBRASKA - Damage to corn scattered in central and south central areas. (Roselle).

NITIDULIDS - ILLINOIS - Cryptarcha sp., probably ampla, found associated with Carpophilus lugubris in sweet corn near Collinsville. (Ill. Ins. Rpt., July 8). CONNECTICUT - Carpophilus dimidiatus abundant in association with European corn borer injury in early sweet corn ears. (Quinton).

CORN FLEA BEETLE (Chaetocnema pulicaria) - SOUTH DAKOTA - Present in several corn fields in eastern area. (Mast). DELAWARE - Causing light feeding injury. (Burbutis, Mason).

ENGLISH GRAIN APHID (Macrosiphum granarium) - NORTH DAKOTA - Populations low in northeast and north central sections; infestations of wheat heads noneconomic. (N. D. Ins. Sur.). WISCONSIN - Most common species of aphid present in small grain fields; counts in headed-to-flowering oats in western area ranged 1-30 per sweep over State. (Wis. Coop. Sur.). NEVADA - Averaged 15-20 to 100-200 per sweep in wheat at Orovada, Humboldt County. (Parker).

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Widespread through at least eastern half of State; adults range 1-5 per stem in barley in shot blade stage, with economic numbers present in many fields. Nymphs range 4-30 per stem in headed barley. (N. D. Ins. Sur.).

- RICE WEEVIL (Sitophilus oryza) - TEXAS - Adults averaged 1 per 2 heads in grain sorghum in some fields in Jackson County. (Hawkins).
- RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - LOUISIANA - Activity decreasing in rice belt. (Spink).
- RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Averaged 2.5 per sweep in rice in Evangeline Parish; heavy in grass adjacent to rice in St. Landry Parish. (Spink).
- FIELD CRICKETS - NORTH DAKOTA - Moderate to heavy nymphal populations of black crickets along roadsides at scattered locations in Red River Valley and in field of flax in Bottineau County; counts 3-15 per square yard. (N. D. Ins. Sur.).
- MORMON CRICKETS - UTAH - Appeared at Dodge Point of San Juan County; up to 25 per square rod in local areas. (Knowlton, Argyle).
- A CRICKET (Peranabrus scabricollis) - IDAHO - Scattered first to third-instar nymphs found in areas of Lemhi and Valley Counties; adults noted in Forney area. (Evans, July 8).
- SOD WEBWORMS - KANSAS - Crambus sp. heavy in Miami County. (Gates). OKLAHOMA - C. mutabilis damaging yards in localized areas of Woodward County. (Okla. Coop. Sur.).
- AN ERIOPHYID MITE (Aceria sp.) - ARIZONA - Heavy, continues to damage Bermuda grass lawns in central and southwest areas. (Ariz. Coop. Sur.).
- SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - None found in Humboldt County (Parker); occasionally found in Lathrop Wells area, varied trace to 20-30 per stem in heavily infested alfalfa seed fields in Pahrump Valley, Nye County; generally light in Moapa Valley, Clark County, with heaviest infested field averaging 5-7 per stem (Bechtel, Zoller). ARIZONA - Infestations continue heavy in alfalfa in most areas of State; considerable damage in many fields. Peak of buildup appears passed in southwest and central areas. (Ariz. Coop. Sur.). KANSAS - Counts in alfalfa in western area ranged from less than 1 to 50 per sweep; average 1 per sweep. Highest count in field in Cheyenne County. (Peters). OKLAHOMA - Increasing on alfalfa in western two-thirds of State; most counts 10-30 per sweep, but heavier counts, up to 50 per sweep, reported locally in northwest and south central areas. Counts in eastern one-third of State low. Populations in west expected to increase if favorable weather continues. (Okla. Coop. Sur.).
- PEA APHID (Macrosiphum pisi) - NEVADA - Found occasionally in alfalfa in Clark and Nye Counties (Bechtel, Lee, Zoller); averaged 20-40 per sweep in Paradise Valley and Leonard Creek, varied 20-30 to 200-300 per sweep in Grovada and 150-300 per sweep in Winnemucca, Humboldt County (Parker). IDAHO - Becoming abundant on alfalfa in Caldwell area. (Bechtolt, July 8). UTAH - Moderately numerous and injuring alfalfa in Rich County areas. (Knowlton). WYOMING - Averaged 5 per sweep in alfalfa in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton). COLORADO - Counts in alfalfa 3,000-12,000 per 100 sweeps in Mesa, Delta and Garfield Counties; some controls being applied; 400-3,000 per 100 sweeps in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). OKLAHOMA - Light in alfalfa in northwest, central and southeast. (Okla. Coop. Sur.). NEBRASKA - Averaged about 5 per sweep in alfalfa in western area. (Simpson). SOUTH DAKOTA - Averaged 19 per sweep in alfalfa in east central area. (Mast). IOWA - Extremely abundant in Sioux County and averaged 50-100 per sweep in east central area. (Iowa Ins. Inf., July 11). WISCONSIN - Counts vary in regrowth alfalfa somewhat; many fields with high counts. Counts per sweep by counties: 40 in Buffalo, 80 in Pepin, 18 in Pierce, 45 in St. Croix, 118 in Dunn and 36 in Chippewa. Counts ranged 15-40 per 10 sweeps in Vernon, Crawford, La Crosse and Trempealeau Counties. Some treatments applied to alfalfa in Dodge County. Some other fields justify treatments. (Wis. Coop. Sur.). ILLINOIS - Averaged 750 per 100 sweeps in clover and alfalfa in eastern and central sections.

(Ill. Ins. Rpt.). MASSACHUSETTS - Collected in Amherst during mid-April and mid-May; counts 200-300 per 100 sweeps in alfalfa common. Virtually all fields in State infested; greatest numbers, 2,000-3,000 per 100 sweeps, widespread in late May and early June. (Fischang).

YELLOW CLOVER APHID (Therioaphis trifolii) - ILLINOIS - Ranged 0-3,280 per 100 sweeps (averaged 347) on clover in eastern and central areas. (Ill. Ins. Rpt.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - SOUTH DAKOTA - Averaged 11 per 10 sweeps in alfalfa in east central area. (Mast). IOWA - Averaged 2-3 per sweep in soybeans and 5-8 per sweep in alfalfa; no obvious injury. (Iowa Ins. Inf., July 11). WISCONSIN - Quite abundant in many southern area alfalfa fields; variable in northwestern area. (Wis. Coop. Sur.). MASSACHUSETTS - First nymphs collected on May 28; adults in early June. While widespread, populations remained low in alfalfa; largest number 42 nymphs per 100 sweeps on June 7. (Fischang).

RAPID PLANT BUG (Adelphocoris rapidus) - DELAWARE - Adults averaged 1-2 per sweep in alfalfa in New Castle and Kent Counties; nymphs increasing. (Burbutis, Mason). MASSACHUSETTS - First nymphs of season collected on May 28; adults in early June. While widespread, populations remained low in alfalfa; largest number of nymphs per 100 sweeps, 30 on June 6. (Fischang).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Nymphs building up in alfalfa; adults present on alfalfa, corn and soybeans. (Burbutis, Mason). MASSACHUSETTS - Populations fairly constant in most alfalfa during May and June; largest population 60 adults per 100 sweeps. Nymphs first collected on May 28. (Fischang).

LYGUS BUGS (Lygus spp.) - NEVADA - Very heavy in several alfalfa seed or over-matured hay fields in Clark and Nye Counties; counts averaged 30-50 adults and/or nymphs per sweep in several fields. (Bechtel, Lee, Zoller). Averaged 3-8 per sweep in Humboldt County. (Parker). UTAH - Moderate to conspicuously numerous in untreated second-crop alfalfa in Duchesne and Uintah Counties; nymphs generally abundant. (Knowlton). WYOMING - Nymphs averaged 4 per sweep and adults 6 per sweep in alfalfa in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton). COLORADO - Counts 200-300 per 100 sweeps in alfalfa in Prowers County; 40-60 per 100 sweeps in Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEBRASKA - Averaged about 12 per 100 sweeps most alfalfa; heavy blasting of blooms noted locally in Dawes County. (Simpson). OKLAHOMA - Generally light, mainly L. lineolaris, in alfalfa in southwest; much heavier, 3-6 per sweep, in south central and southeast. (Okla. Coop. Sur.).

MEADOW PLANT BUG (Leptopterna dolabratus) - MASSACHUSETTS - Infestations widespread but somewhat sporadic in alfalfa during June; greatest populations apparently associated with alfalfa-grass mixtures. Largest populations appeared during first week of June, with sharp decline later in month. An extreme infestation on June 2 in Bristol County resulted in nearly 1,000 nymphs per 100 sweeps; most counts less than 50 per 100 sweeps. (Fischang).

FALSE CHINCH BUGS (Nysius spp.) - MISSOURI - Feeding on alfalfa and in grassy areas around corn and soybeans. (Munson, Thomas, Wood). NEW MEXICO - Heavy populations of N. raphanus on castor beans in Tucumcari area, Quay County. (N. M. Coop. Rpt.). UTAH - Exceedingly numerous in some weedy alfalfa seed fields in Duchesne County. (Knowlton).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Adults averaged 2-3 per 10 sweeps in Crawford, Vernon and Trempealeau County alfalfa; scarce in other western fields. (Wis. Coop. Sur.). IOWA - Averaged 5-10 per sweep in alfalfa and 3-5 per sweep in soybeans. (Iowa Ins. Inf., July 11). ILLINOIS - Counts per 100 sweeps in eastern and central areas were 145 adults and 125 nymphs in clover and alfalfa and 17.5 adults and 4 nymphs in soybeans. (Ill. Ins. Rpt.). MISSOURI - Heavy in south

central and southeast areas. Much yellowing of alfalfa evident. Counts range 5-35 nymphs and adults per sweep; average 16-20. (Munson, Thomas, Wood). OHIO - Damaging second-growth alfalfa in Perry County; 6 per sweep. Counts 5-6 per sweep in central area; yellowing of few leaves noted on second growth ready for harvest. (Blair). MARYLAND - Increasing on alfalfa in central sections; counts over 10 per sweep. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs in soybeans over State; nymphs increasing in alfalfa in New Castle and Kent Counties. (Burbutis, Mason). MASSACHUSETTS - First specimens collected in alfalfa on May 28 in Amherst area; populations very low 2 weeks later at first cuttings. (Fischang).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - MASSACHUSETTS - First collected in late May in alfalfa, becoming widespread but relatively low during June; largest collection 60 per 100 sweeps on June 7 in Middlesex County. (Fischang).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations decreasing in alfalfa statewide; averaging 100 per 100 sweeps in many fields. (Ariz. Coop. Sur.). OKLAHOMA - Nymphs and adults light, 0-0.3 per sweep, in alfalfa in southwest. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - MARYLAND - Adults very abundant on alfalfa and red clover in Frederick and Howard Counties. (U. Md., Ent. Dept.). MASSACHUSETTS - First spittle masses observed in mid-May and adults collected June 7. Nymphal populations damaging in southern Berkshire County in early June; rosetting of alfalfa apparent. Largest infestation averaged 49 spittle masses per 25 stems. (Fischang).

A FLEAHOPPER (Spanogonicus albofasciatus) - NEVADA - Averaged 5 per sweep in most alfalfa in Moapa Valley, Clark County. (Bechtel, Zoller).

ALFALFA WEEVIL (Hypera postica) - UTAH - Larvae holding back second-growth alfalfa; damage unusually extensive this season. (Knowlton). Adults active in some areas of Cache Valley; untreated alfalfa severely damaged. (Haws). WYOMING - Larvae averaged 2 per sweep in alfalfa in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton). COLORADO - Larval populations dropped; 0-20 per 100 sweeps in Larimer and Weld Counties; 0-10 per 100 sweeps in Crowley, Otero and Pueblo Counties. (Colo. Ins. Sur.). NEBRASKA - Averaged less than 1 per sweep in Scotts Bluff, Sioux and Dawes Counties. Collected in Logan County for first time; det. R. E. Warner. Note in CEIR 10(25):515 of collection of this species in Dawson County is in error. (Simpson). MASSACHUSETTS - Found in alfalfa throughout State during June except for offshore islands and Cape Cod, where no collections made, and in northwestern corner of State (northern Berkshire County). In Amherst, adults collected on May 4 and larvae first collected along southern border of State in late May and early June. Largest populations occurred in southern Berkshire and Hampden Counties, with 38 larvae per 100 sweeps maximum. First cuttings during June reduced numbers. (Fischang).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - OHIO - Adults found in Perry County; 2 per sweep. A new county record. (Blair).

A WEEVIL (Sitona scissifrons) - SOUTH DAKOTA - Adults low, averaging only 1 per 10 sweeps. (Mast).

BLISTER BEETLES - KANSAS - Unidentified species numerous in many alfalfa fields in western area; counts as high as 50 per square foot within fields in Wallace County. (Peters). OKLAHOMA - Damaging peanut plants in Love County. (Okla. Coop. Sur.).

WEBWORMS (Loxostege spp.) - NEBRASKA - Adults averaged 1.5 per 10 sweeps in most alfalfa fields. (Simpson). COLORADO - L. sticticalis and L. commixtalis adults numerous and eggs being deposited on alfalfa in Alamosa, Rio Grande, Saguache, Prowers, Bent, Otero, Crowley, Pueblo, Weld and Larimer Counties. (Colo. Ins. Sur.).



KANSAS - L. sticticalis very numerous in alfalfa in northwest. (Peters).  
OKLAHOMA - Populations increasing in alfalfa locally in south central and south-east areas; counts ranged 0.2-2 and 0.5-1.5 per square foot. Occasional larva noted in southwest. (Okla. Coop. Sur.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Severe in alfalfa in Alturas, Surprise Valley and Lookout areas, Moccasin County; preventing regrowth in many cases. (Cal. Coop. Rpt.). NEVADA - Moderate to heavy on alfalfa in Churchill, Humboldt, Lyon and Washoe Counties. (Batchelder, York, Parker).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - WYOMING - Larvae averaged 3 per 25 sweeps in alfalfa in Sublette and Lincoln Counties and 2 per 25 sweeps in Uinta and Carbon Counties. (Fullerton). KANSAS - Larvae 1-3 per sweep in western area. (Peters). OKLAHOMA - Counts 0.1-1 per sweep in alfalfa in Choctaw County. (Okla. Coop. Sur.). DELAWARE - Larvae fairly common in soybeans in Kent County. (Burbutis, Mason).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Heavy on sweetclover in association with Prodenia sp. in Camino, El Dorado County. (Cal. Coop. Rpt.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Light infestations on field peas in Spalding County. (Dupree, June 28). ALABAMA - Active in grain sorghum, field peas and other crops; severe damage to soybeans in Mobile County. Heaviest infestations in beans following oats and wheat; one field completely destroyed. (Smith, Wallace, Seibels). MISSISSIPPI - Causing heavy damage to soybeans in George County, with some damage to corn. (Bond). LOUISIANA - Considerable damage noted in field of soybeans in East Baton Rouge Parish. (Spink).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Causing concern to peanut growers in McIntosh County; medium infestation, 1.5 per linear foot, in field in Marshall County. (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Larvae causing light to moderate foliage injury to soybeans in Worcester County. (U. Md., Ent. Dept.).

LEAF TIERS - DELAWARE - Undetermined species very common in soybeans throughout State; causing noticeable feeding injury. (Burbutis, Mason).

CUTWORMS - GEORGIA - Infestations moderate to heavy and general throughout peanut belt. (Johnson, Branch).

JAPANESE BEETLE (Popillia japonica) - SOUTH CAROLINA - Spreading over wider area in Spartanburg County; damaging Sericea lespedeza to point that controls needed. (Nettles et al.). DELAWARE - Adult feeding becoming noticeable in soybeans and corn in all sections. (Burbutis, Mason). MARYLAND - Moderate on soybeans in Worcester County. (U. Md., Ent. Dept.).

PALE-STRIPED FLEA BEETLE (Systema blanda) - NEBRASKA - Populations in alfalfa ranged 3-6 adults per 10 sweeps. (Simpson). DELAWARE - Adults present in soybeans in New Castle County. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - LOUISIANA - Ranged 5-125 per 50 sweeps in 16 fields of soybeans in Tensas, East and West Carroll Parishes. (Spink). MARYLAND - Adults causing light to moderate foliage injury to soybeans in southern sections. (U. Md., Ent. Dept.).

THRIPS - NEW MEXICO - Seed alfalfa treated in Quay County. A problem on peanuts in Roosevelt County, severely curling leaves. (N. M. Coop. Rpt.). OKLAHOMA - Continue a problem in peanuts in Pottawatomie, Okfuskee, Hughes, McIntosh and Marshall Counties. (Okla. Coop. Sur.). ALABAMA - Frankliniella fusca continues to damage peanuts to some degree in peanut-growing area of State; not nearly as noticeable as 3 weeks ago. (Grimes).

FRUIT INSECTS

COLLING MOTH (Carpocapsa pomonella) - MISSOURI - New entries in Kansas City area on July 8 and in Columbia area on July 12. (Wkly. Rpt. Fr. Gr.). ILLINOIS - Larval entries increased rapidly in Carbondale area. (Meyer, July 13). INDIANA - Second-brood larval entries expected by August 5 in Orleans area. (Marshall). Emergence of first-brood adults heavy since July 5 in Vincennes area; oviposition expected to increase toward July 16. (Hamilton). WISCONSIN - None reported caught in blacklight trap at Gays Mills; 1 caught July 11 at Middleton. (Wis. Coop. Rpt.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MISSOURI - Moderately heavy infestation necessitating special control application found July 11 on young unsprayed trees in central area; some pupae noted in similar orchard near Kansas City, July 8. (Wkly. Rpt. Fr. Gr.). WISCONSIN - Eight adults trapped at Gays Mills during week. (Wis. Coop. Sur.). MASSACHUSETTS - First-brood moths present. (Crop Pest Cont. Mess.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - GEORGIA - Infestation in harvested peaches now greater than that of an average year at Ft. Valley; controls advised on peaches yet to be harvested. (Snapp). MISSOURI - Between broods in central area, with few full-grown larvae still found in tender terminals. Situation appears similar in west central section. (Wkly. Rpt. Fr. Gr.).

APPLE APHID (Aphis pomi) - MASSACHUSETTS - Continues abundant in many apple blocks. (Crop Pest Cont. Mess.). DELAWARE - Heavy in young apple orchard in Sussex County; causing leaf curl. (Burbutis, Mason). OHIO - Serious in some central area apple orchards. (Parks, July 7).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Reported from Kenosha County July 12. (Wis. Coop. Sur.). MASSACHUSETTS - Adults continue to emerge. (Crop Pest Cont. Mess.).

ORCHARD MITES - MASSACHUSETTS - Panonychus ulmi increasing in some apple blocks. (Crop Pest Cont. Mess.). OHIO - P. ulmi laying eggs on apple after almost complete absence during spring and early summer. (Parks, July 7). Untreated apple and pear trees show bronzed foliage; 50-60 eggs per leaf. (Holdsworth). INDIANA - P. ulmi and Tetranychus telarius showing maximum activity on apples in Orleans area. (Marshall, July 12). P. ulmi populations variable in Vincennes area; severe bronzing occurred in certain instances where controls inadequate. T. telarius building up in certain peach blocks; controls warranted. (Hamilton, July 11). MISSOURI - T. telarius building up; averaged 1-3 per leaf in central area, with many eggs present. (Wkly. Rpt. Fr. Gr.). COLORADO - T. telarius moving from cover crop to fruit trees in Mesa County. (Colo. Ins. Sur.). NEW MEXICO - Tetranychus sp. a problem in a few De Baca County orchards. (N. M. Coop. Rpt.).

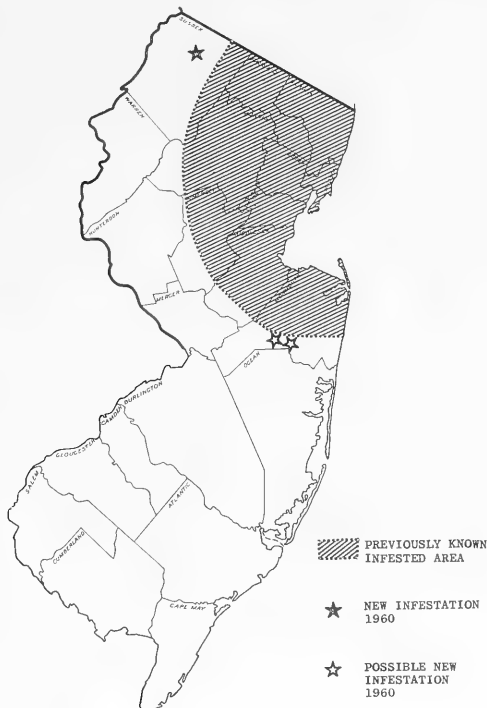
PEACH TREE BORER (Sanninoidea exitiosa) - INDIANA - Emergence started in Vincennes area. (Hamilton, July 11). KANSAS - One female observed on budded peach stock July 9 in Franklin County. (Thompson, Eshbaugh).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Light on plum in Orangevale, Sacramento County. (Cal. Coop. Rpt.).

HARLEQUIN BUG (Murgantia histrionica) - NEW MEXICO - Causing some damage to fruit in Lincoln County. (N. M. Coop. Rpt.).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - CALIFORNIA - Adults in Frick traps in cultivated cherry trees in eradication areas in Mt. Shasta City, Seiad Valley and Klamath River, and larvae found in fruit at Horse Creek, all in Siskiyou County; adults also taken in traps in Hoopa and Weitchpec, Humboldt County. (Cal. Coop. Rpt.).

EUROPEAN APPLE SAWFLY (*Hoplocampa testudinea*) - NEW JERSEY - Surveys conducted during May and June of 1960 to determine infested area. Total of 134 locations checked in 7 counties. One new infestation found at Colesville, Sussex County, approximately 7 miles west of previous infestation in the county, and a possible infestation may also be about 7 miles south of infested area in Monmouth County. On basis of surveys made since 1957, and previous records, spread is approximately 5-10 miles a year. A map, showing distribution in the State, is illustrated below. (N. J. Econ. Ins. Sur.).



FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Activity increasing in southeast section; caused light to moderate defoliation of pecan trees. (Banks). OKLAHOMA - Light to heavy on pecans in Choctaw County and on cottonwoods in southwest area. (Okla. Coop. Sur.). OREGON - Tents appearing on untreated fruit and nut trees throughout Willamette Valley; averaged 6 per walnut tree in Salem. (Capizzi).

FILBERTWORM (*Melissopus latiferreanus*) - CALIFORNIA - Light in apricots in La Grange, Stanislaus County. (Cal. Coop. Rpt.). OREGON - First adult of season emerged in Willamette Valley July 6. (Every).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - OKLAHOMA - Infestations of 30 percent common in pecans in Love County. (Okla. Coop. Sur.).

GRAPE ROOT BORER (*Vitacea polistiformis*) - MISSOURI - Killing grapevines in vineyards scattered over south central area. (Munson, Thomas, Wood).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praeifica) - CALIFORNIA - Heavy on grapes in Tulare County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - PENNSYLVANIA - Especially damaging to grape and raspberry foliage and fruits. (Ins. Notes, July 11). OHIO - Damaging grapes, raspberries and roses in Trumbull County. (Blair, Holdsworth). NORTH CAROLINA - Heavy on apple foliage in Wayne County. (Farrier).

GRAPEVINE APHID (Aphis illinoisensis) - RHODE ISLAND - Heavy infestation on grape in West Warwick, July 7. (Hansen).

A GRAPE LEAFHOPPER (Erythroneura sp.) - OKLAHOMA - Medium infestations noted on leaves of grapevines in Payne and Noble Counties. (Okla. Coop. Sur.).

### TRUCK CROP INSECTS

APHIDS - MASSACHUSETTS - Numerous on many vegetable crops. (Crop Pest Cont. Mess., July 18). NEW YORK - Appearing on crucifers in Monroe County and still a problem on most crops where regular treatments not applied in Niagara County. (N. Y. Wkly. Rpt.). NEW JERSEY - Myzus persicae increasing on potatoes in some counties. (Ins.-Dis. Newsl., July 12). DELAWARE - M. persicae building up on untreated peppers in New Castle and Sussex Counties. (Burbutis, Mason). MARYLAND - Phorodon menthae collected on spearmint at Lusby, Calvert County, June 15 and at University Park, Prince Georges County, July 9. Det. by M. D. Leonard. (U. Md., Ent. Dept.). WISCONSIN - Macrosiphum pisi averaged 8.9 per sweep in St. Croix County peas and 3.0 in Langlade County. Numbers dropped in much of the pea acreage. No M. solanifolii noted in southeastern or northern areas. Aphid colonies developing in Waushara County beans on July 7, averaged 1 colony per 5 plants, and in Trempealeau and Chippewa County beans on July 13. Brevicoryne brassicae moderate on 200 acres of cabbage in Racine-Kenosha County area. (Wis. Coop. Sur.). COLORADO - Myzus persicae and Macrosiphum sp. populations more than doubled in untreated potatoes, Weld County. (Colo. Ins. Sur.).

Potato Aphids in Maine - Populations continued to increase rapidly in fields not treated. By 3-leaf method of count, 35-100 percent of plants infested, averaging up to 11 per plant. Populations on late potatoes still small. POTATO APHID (Macrosiphum solanifolii) most common, followed by BUCKTHORN APHID (Aphis nasturtii). Very small numbers of GREEN PEACH APHID (Myzus persicae) and FOXGLOVE APHID (Myzus solani) present. (Shands).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Population increased on potatoes; averaged 1 per 100 sweeps in untreated fields in Weld County and 2-4 in Rio Grande County. (Colo. Ins. Sur.). WYOMING - Adults averaged 1 per 100 sweeps of matrimonyvine in Uinta and Sweetwater Counties. (Fullerton).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - NORTH DAKOTA - Averaged 2 adults per 10 sweeps in most Red River Valley potato fields. (N. D. Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Light on 10-25 percent of potato acreage in Kenosha and Racine Counties; averaged 1 per 20 bean plants on July 7 in Waushara County and 1 per 10 plants in Columbia County. Averaged 1 per 30 plants in St. Croix County and 1 per 20 plants in Trempealeau County on July 13. (Wis. Coop. Sur.).

SOUTHERN POTATO WIREWORM (Conoderus falli) - SOUTH CAROLINA - Light to moderate populations survived 1959-60 winter in Charleston vicinity. Injury to 1960 spring crop generally light, partly due to rather extensive use of insecticides. Approximately 950 shipping-point inspection certificates issued to Charleston County potato growers during June showed 1 percent of potato lots had damage in excess of 6 percent (current tolerance allowed for damage due to all defects in case of U.S. No. 1 potatoes). Damage in excess of 3 percent in 5 percent of lots

and damage of 1.5-2.9 percent in 18 percent of lots. Approximately 75 certificates issued in Beaufort County in June indicated that damage about same as in Charleston County. (Cuthbert, Day, Reid).

POTATO FLEA BEETLE (*Epitrix cucumeris*) - WISCONSIN - Light on 10-25 percent of potato acreage in Kenosha and Racine Counties. (Wis. Coop. Sur.). DELAWARE - Adults abundant, causing moderately heavy injury to potatoes, statewide. Adults present on beans in Kent and Sussex Counties. (Burbutis, Mason).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - IDAHO - Infestations common throughout Jefferson County; adults more abundant than past years. (Gooch, July 8). Severe in field near Hazelton on July 1. (Valcarce). UTAH - Damaged tomato plants at Honeyville. (Knowlton, Allred). NEW YORK - Heavy on tomatoes in Niagara County, in comparison with 1959. (N. Y. Wkly. Rpt.).

PEPPER WEEVIL (*Anthonomus eugeni*) - CALIFORNIA - Found in central and southern Orange County; early enough to develop into serious infestation. Found in these areas in 1959, but mainly on late peppers. (J. C. Elmore).

HORNWORMS (*Protoparce* spp.) - CALIFORNIA - Light infestation in San Joaquin Valley areas. (Stomblner). COLORADO - Eggs average 0.75 per 100 leaves in Prowers, Otero, Bent, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEW MEXICO - Occasional larva found on tomatoes in Tucumcari area. (N. M. Coop. Rpt.). UTAH - Caused local injury to tomatoes in northeastern area. (Knowlton).

STALK BORER (*Papaipema nebris*) - MISSOURI - Destructive in tomatoes at Columbia. (Wkly. Rpt. Fr. Gr.). MAINE - Light injury to peppers in Monmouth area. (Boulanger, July 8).

TOMATO FRUITWORM (*Heliothis zea*) - CALIFORNIA - Damaging small tomatoes in Orange County. (A. F. Howland). This pest and leaf miners very light on tomato plantings in upper San Joaquin and lower Sacramento Valleys. (V. Stomblner). COLORADO - Eggs averaged 0.6 per 100 leaves in Prowers, Otero, Bent, Crowley and Pueblo Counties. (Colo. Ins. Sur.).

TOMATO RUSSET MITE (*Aculus lycopersici*)\* - CALIFORNIA - Appearing on lower leaves of tomato plants in Woodland and River districts, Yolo County, and Stockton area, San Joaquin County. (V. Stomblner).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - UTAH - Damaging in Tooele County. (Knowlton). MAINE - Light damage to beans in Monmouth area, Kennebec County. (Boulanger, July 8). COLORADO - Averaged 3-5 larvae per 10 plants in Weld and Larimer Counties; 3-5 adults per 100 plants in Delta County. (Colo. Ins. Sur.). ALABAMA - Subsided some in most areas of State. (Grimes).

LYGUS BUGS (*Lygus* spp.) - CALIFORNIA - *L. elisus* and *L. hesperus* appearing in injurious numbers on lima beans in western part of Orange County; being kept under control by predators in central section. (J. C. Elmore).

A LEAF BEETLE (*Anomoea laticlavata*) - MISSOURI - Destructive numbers on beans at Columbia. (Wkly. Rpt. Fr. Gr.).

SPIDER MITES - CALIFORNIA - *Tetranychus telarius* appearing on beans in Orange County; infestations spotty. (A. F. Howland). OREGON - *T. telarius* severely damaged 155 acres of mint in Jefferson County. (Bierly). An undetermined species numerous on onions in the Labish area of Marion County. (Arias). OKLAHOMA - *Tetranychus* spp. damaging corn and tomatoes in gardens in Pawnee and Delaware Counties. (Okla. Coop. Rpt.).

\* Keifer, H. H., 1959. Bur. Ent., Cal. Dept. Agr., Occasional Paper No. 1, Eriophyid Studies No. 27, page 5, May 8.

SPINACH LEAF MINER (Pegomya hyoscyami) - UTAH - Population normal in Salt Lake County sugar beet fields. (Knowlton).

BEEF LEAFHOPPER (Circulifer tenellus) - IDAHO - Migrations occurring from Sailor Creek area; adult counts up to 4 per foot of beet row during last week of June. (Evans). COLORADO - Increasing in Mesa and Garfield Counties; averaged 20-50 per 100 sweeps and incidence of curly top 10-20 percent in some fields. Curly top 10-15 percent in Mesa County. (Colo. Ins. Sur.). UTAH - Averaged 11-21 per 25 sweeps on Russianthistle at Wellington. Tomatoes in this area show 3-8 percent curly top and squash 5 percent. (Knowlton).

BEEF WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Moth flights light to heavy in Red River Valley; egg masses trace to 10 per plant; larvae up to 4 per plant. Infestations spotty, with considerable variation between fields. (N. D. Ins. Sur.). COLORADO - Adults abundant and eggs being deposited in Alamosa and Rio Grande Counties. (Colo. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW YORK - Numerous in Niagara County fields where control negligent. (N. Y. Wkly. Rpt.). DELAWARE - Adults very abundant; heavy egg laying noted in New Castle County. (Burbutis, Mason). WISCONSIN - Light in Racine and Kenosha Counties; eggs and larvae present. (Wis. Coop. Sur.). OREGON - Young larvae appearing on a variety of crops in Willamette Valley. (Capizzi).

CABBAGE LOOPER (Trichoplusia ni) - MISSOURI - Destructive to cabbage at Columbia; difficult to control in southeast. (Wkly. Rpt. Fr. Gr.). WISCONSIN - Light in Racine and Kenosha Counties, eggs and larvae present. (Wis. Coop. Sur.).

HARLEQUIN BUG (Murgantia histrionica) - MISSOURI - Heavy on crucifers in central area. (Munson, Thomas, Wood). NEW MEXICO - Extremely heavy and damaging cabbage near Lovington, Lea County. (N. M. Coop. Rpt.).

STRIPED CUCUMBER BEETLE (Acalymma vittata) - CALIFORNIA - Moderate on cantaloup in Chico, Butte County. (Cal. Coop. Rpt.). NEW YORK - Remains heavy in Niagara County. (N. Y. Wkly. Rpt.).

CARROT WEEVIL (Listronotus oregonensis) - NEW JERSEY - Ten fields of overwintered parsley in Atlantic and Cumberland Counties, Vineland vicinity, examined for egg deposition during second week of May; 9 fields found infested. Average number of egg punctures per 100 plants was 21.6 compared with 19.2 in 1959 in same area. (N. J. Econ. Ins. Sur.). Infestation found in southern area. (Ins.-Dis. Newsl., July 12). NEW YORK - Infesting a few fields of carrots in Wayne County. (N. Y. Wkly. Rpt.).

THRIPS - IDAHO - High in untreated onion seed fields in Parma area, 46 per 10 seed heads. Averaged about 9 per umbel in untreated carrot seed field near Parma. (Scott, July 8). COLORADO - Thrips tabaci averaged 15-20 per plant in untreated onion fields in Delta County; 5-20 per plant in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.).

ONION MAGGOT (Hylemya antiqua) - IDAHO - First-generation damage to onions very low in southwest. (Scott, July 8). OREGON - Populations low in Willamette Valley. (Arias).

TORTOISE BEETLES - DELAWARE - Metritona bicolor, M. bivittata and Deloyala guttata adults and larvae common on sweetpotatoes in Sussex County; moderately heavy injury. (Burbutis, Mason).

BLISTER BEETLES - TEXAS - General in Palo Pinto County. (Tex. Coop. Rpt.). ALABAMA - Epicauta spp. caused considerable damage to tomato and other crops in central area. (Barwood, Grimes). NORTH CAROLINA - Epicauta sp. averaged 5-6 per plant on tomatoes and peppers in Hoke County. (Chadwick). OKLAHOMA - Damaging in Creek, Le Flore and Pittsburg Counties. (Okla. Coop. Rpt.).

#### TOBACCO INSECTS

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Several injurious infestations on early planted tobacco in St. Marys and Calvert Counties. (U. Md., Ent. Dept.).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Feeding on tobacco in Yadkin County. (Jones, Farrier).

TOBACCO BUDWORMS (Heliothis spp.) - NORTH CAROLINA - Averaged 4-5 per 50 plants in Granville County. (Chamberlin).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Continues to increase, particularly on late tobacco in St. Marys and Calvert Counties. (U. Md., Ent. Dept.).

TOBACCO HORNWORMS (Protoparce spp.) - NORTH CAROLINA - Averaged 5-6 per 50 plants in Granville County. (Chamberlin). MARYLAND - Several moderate to heavy infestations on more advanced tobacco in St. Marys and Calvert Counties. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Populations increasing in southeast and south central cotton; infestation counts 5-67 percent, with heavier counts, 10-40 percent, becoming increasingly common as cotton is "squaring" over a wide area. Only localized "hot spots" noted in southwest. (Okla. Coop. Sur.). MISSOURI - Of 905 fields scouted, 9 infested, with highest percent punctured squares 4. (Munson, Thomas, Wood). TEXAS - Infestations continue heavy in many fields in McLennan and Falls Counties; averaged 27.3 percent punctured squares in late treated fields and 44.7 percent in fields not receiving late treatments, with overall average 33.1 percent. (Parencia, Cowan, Davis). LOUISIANA - Square infestation averaged 10 percent in Tallulah area; first-generation weevils present in most fields. (Smith et al.). ARKANSAS - First-generation emergence well underway in most cotton; tremendous variation in infestation counts. Second-generation emergence occurring in some early planted cotton in southeast. Percent infested fields 52, compared with 61.5 at same time in 1959. Total of 555 fields treated for boll weevil. (Ark. Ins. Rpt.). TENNESSEE - Weevil mortality high in western area where dry weather occurred. Infestations light in Henderson, Madison, Obion and Lauderdale Counties. First generation should start causing damage by July 22. (Locke). MISSISSIPPI - Infestations generally low in delta counties; average less than 3 percent. (Merkel et al.). ALABAMA - Infestations continue to increase; ranging as high as 50-60 percent in central and southern areas and up to 20 percent in northern untreated areas. New generation expected to begin in northern area about July 22. (Grimes). GEORGIA - Square counts made in 38 cotton fields in south, middle and northern sections; averaging 17 percent punctured squares. (Johnson). SOUTH CAROLINA - First-generation weevils present in most counties; several counties report 50 percent of squares punctured and 1 county reports 75 percent infestation in untreated fields. (Cott. Lett.). In Florence area, first-generation weevils at peak in some fields. Weather favorable for large populations. (Taft, Hopkins, Jernigan). NORTH CAROLINA - First-generation weevils very active in Coastal Plains. (Cott. News Lett.).

**BOLLWORMS (Heliothis spp., et al.)** - ARIZONA - Light larval infestations in few cotton fields in Buckeye area, Maricopa County, and in scattered fields throughout Pinal County; egg counts low. (Ariz. Coop. Sur.). NEW MEXICO - Occasional eggs and adults in Chaves and Eddy County cotton fields. (N. M. Coop. Rpt.). OKLAHOMA - Scattered, light infestations in cotton in south central, southeast and east central areas; none noted elsewhere. (Okla. Coop. Sur.). TEXAS - Infestations heavy in most succulent cotton in McLennan and Falls Counties. Infestations averaged 10.1 eggs and 7.3 larvae per 100 terminals; square injury averaged 7.3 percent and boll injury, 4 percent. Moth collections heavy. (Parencia, Cowan, Davis). LOUISIANA - Square infestation averaged 2 percent in Tallulah area. Eggs averaged 2.14 and larva 0.59 per 100 terminals. (Smith et al.). ARKANSAS - Activity increasing; third-generation moths present and egg deposition occurring; 39.6 percent of cotton fields infested, compared with 18.3 percent at same time in 1959. Total of 186 fields treated for bollworms. (Ark. Ins. Rpt.). MISSOURI - Counts 0-6 eggs and 0-3 larvae per 100 terminals in 57 infested fields, of 905 scouted. (Munson, Thomas, Wood). MISSISSIPPI - Activity quite variable but generally light in delta counties. New moth flight expected during week ending July 22. Egg counts extremely low, 0-2 per 100 terminals. (Merkl et al.). ALABAMA - Infestations increasing generally; most pronounced increase in northern area, with some infestations as high as 10-16 young larvae per 100 terminals. (Grimes). GEORGIA - Egg counts made in 38 cotton fields in south, middle and northern areas; averaging 18 per 100 terminals. Larval counts averaged 3 per 100 terminals in same areas. (Johnson). SO. CAR. - Increasing most areas. (Cott.Lett.).

**PINK BOLLWORM (Pectinophora gossypiella)** - ARIZONA - One moth emerged from material buried 4 inches in cage tests at Safford in Graham County on July 8. (Ariz. Coop. Sur.).

**BEE T ARMYWORM (Spodoptera exigua)** - ARIZONA - Infestations light to medium in pink bollworm-treated areas; apparently building up much more slowly than in 1959. (Ariz. Coop. Sur.).

**WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica)** - CALIFORNIA - Heavy infestations in cotton in Tulare County. (Cal. Coop. Rpt.).

**CABBAGE LOOPER (Trichoplusia ni)** - NEVADA - Trace numbers in cotton in Pahrump Valley, Nye County, and Moapa Valley, Clark County. (Bechtel, Zoller). OKLAHOMA - Widely scattered, very light infestations noted. (Okla. Coop. Sur.).

**FLEAHOPPERS** - NEVADA - Spanogonicus albofasciatus averaged 5-8 per 100 sweeps in cotton in Moapa Valley, Clark County, and 3-5 per 100 sweeps in Pahrump Valley, Nye County. (Bechtel, Zoller). OKLAHOMA - Psallus seriatus decreasing over State; infestations, 0-10 per linear foot, continue to cause concern in localized areas, particularly in southwest. (Okla. Coop. Sur.). MISSOURI - Of 905 fields scouted, 586 infested with 0-16 per 100 terminals. (Munson, Thomas, Wood). ALABAMA - P. seriatus light to moderate on late-planted cotton in northern area. (Grimes).

**LYGUS BUGS (Lygus spp.)** - NEVADA - Occasionally found in cotton in Pahrump Valley, Nye County; none found in Moapa Valley, Clark County. (Bechtel, Zoller). ARIZONA - Counts higher in cotton throughout State, particularly in southwest and central areas. Nymphs increased greatly, indicating cotton now more attractive than alfalfa for egg deposition. Counts per 100 sweeps in untreated fields averaged 15 in southeast, 20 adults and 20-30 nymphs in central, and 20-30 adults and nymphs in southwest. (Ariz. Coop. Sur.). LOUISIANA - L. lineolaris averaged less than 1 per sweep in treated fields and 17 in untreated fields in Tallulah area; mostly adults. (Smith et al.).

**BROWN STINK BUG (Euschistus servus)** - ARIZONA - Large numbers moving into cotton located near harvested sugar beet seed fields in Maricopa County. Damage to squares and small bolls has been heavy in some cases. (Ariz. Coop. Sur.).



A LEAFHOPPER (Empoasca sp.) - NEVADA - Heavy, causing distortion of lower leaves of cotton in Moapa Valley, Clark County. (Bechtel, Zoller).

A WHITEFLY - NEVADA - Increasing in most cotton fields in Pahump Valley, Nye County. (Bechtel, Lee, Zoller).

BLISTER BEETLES - NEW MEXICO - Have been a problem in cotton in Lea County; populations appear to be diminishing. (N. M. Coop. Rpt.).

PALE-STRIPED FLEA BEETLE (Systema blanda) - NEVADA - Damage light to cotton leaves and bracts in Moapa Valley, Clark County. (Bechtel, Zoller).

THRIPS - OKLAHOMA - Frankliniella sp. infestations in cotton decreasing, but continue to cause some concern in southwest area where cotton is later than normal. (Okla. Coop. Sur.).

SPIRIDER MITES - ALABAMA - Undetermined species causing concern in Tennessee River Valley area; however, infestations contained for most part by border treatment of most fields. (Grimes). GEORGIA - Moderate infestations in Terrell County. (Snow).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - DELAWARE - Over 50 percent of young Scotch pines infested in plantation of approximately 1,000 trees, in New Castle County. (Bray). OKLAHOMA - Heavy (11 per tree) on young pines (3-8 feet tall) in planting checked in McCurtain County. (Okla. Coop. Sur.). NORTH CAROLINA - Activity about normal in southeastern portion of State. (Kunselman, N. C. For. News Lett.). ALABAMA - Second generation nearing end; moth flights across central section should occur within next 10 days; parasitism has been heavy. (Hyche).

EUROPEAN PINE SHOOT MOTH (Rhyacionia bouliana) - MAINE - Causing light injury to red pine in South Portland area. (Nash, July 8). WISCONSIN - Adults emerging July 13 in heavily infested red pine on Chambers Island, Door County. (Wis. Coop. Sur.).

PINE WEBWORM (Tetralopha robustella) - ALABAMA - Active on 2 to 3-year-old loblolly pine plantings in Houston County; only an occasional seedling affected. (Grimes).

PINE FALSE WEBWORM (Acantholyda erythrocephala) - Found on white, red and Scotch pines in lower Hudson Valley, NEW YORK, and in southern CONNECTICUT. (Northeast. For. Pest Rpt., July 15).

ZIMMERMAN PINE MOTH (Dioryctria zimmermani) - WISCONSIN - Late-instar larvae reported from shoots and main stems of red pine in Iowa, Grant and Richland Counties during early July; infestations averaged about 1 percent. (Wis. Coop. Sur.).

BARK BEETLES (Dendroctonus spp.) - CALIFORNIA - D. jeffreyi causing spotted dying of mature Jeffrey pines in Angeles National Forest recreational areas, Los Angeles County. This is a new locality record. (C. D. Plank). NORTH CAROLINA - Small outbreak of D. terebrans on shortleaf pine in Davidson County. (Hinshaw, N. C. For. News Lett.). ALABAMA - Increase in D. terebrans activity reported in small plantation in De Kalb County. (Grimes).

PINE ENGRAVERS (Ips spp.) - CALIFORNIA - I. radiatae heavy on Monterey pine in Orinda, Contra Costa County. (Cal. Coop. Rpt.). NORTH CAROLINA - Small outbreak of Ips spp. in white pine in Henderson and Polk Counties and on shortleaf pine in Davidson County. (Shaw, Hinshaw, N. C. For. News Lett.).

WHITE-PINE WEEVIL (Pissodes strobi) - WISCONSIN - Infestations heavy on jack and red pine plantings in Oneida, Vilas and Marinette Counties; white pine also under attack throughout northeast area. (Wis. Coop. Sur.).

PINE COLASPIS (Colaspis pini) - MISSISSIPPI - Pine stands in Oktibbeha County area heavily infested; damage as far south as Jackson, Hinds County. (Hutchins).

A CHAFER (Dichelonyx sp.) - CALIFORNIA - Heavy populations on fir in Lake Alpine area, Stanislaus County. (Cal. Coop. Rpt.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - CONNECTICUT - Reported at abnormally high levels, where it is becoming serious in Douglas-fir Christmas tree plantings. (Northeast. For. Pest Rpt., July 15).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NORTH DAKOTA - Severe on Colorado spruce at Cavalier, Pembina County. (N. D. Ins. Sur.).

PINE SAWFLIES - Two species of Neodiprion defoliating pitch pine near Londonderry, NEW HAMPSHIRE; an unnamed species also common on this host near Gray, MAINE. Neodiprion nanulus or N. pratti paradoxicus present on pitch pine in Plymouth County, MASSACHUSETTS. Populations of latter species definitely down, from those of 1959, in southern NEW JERSEY; N. pini-rigidae becoming more serious on pines

in this area. Virus sprayed against *N. sertifer* near Kresgeville, PENNSYLVANIA, in 1958, still present and showing effect. *N. sertifer* very common on various pines in southwestern CONNECTICUT and in southern and western NEW YORK. *N. pratti* on downgrade in MARYLAND. *Diprion similis* and *D. frutetorum* infesting white and red pines, respectively, in central CONNECTICUT and eastern MASSACHUSETTS. (Northeast. For. Pest Rpt., July 15). WISCONSIN - Larvae of *N. virginiana* complex collected in Columbia County on July 11 and in Buffalo County on July 12. First-instar *N. swainei* larvae on jack pine July 7 in Dane County and entering second instar in Buffalo County, July 12. One *N. nanulus* larval colony causing negligible defoliation to red pine in Oneida County, July 9. Late-instar *D. frutetorum* larva collected from jack pine near Pine Bluff, Dane County, July 7. (Wis. Coop. Sur.).

LARCH SAWFLY (*Pristiphora erichsonii*) - WISCONSIN - Larvae range one-fourth to three-fourths inch in length on larch in Dane County, July 12; some cocooning probable. Extensive infestations in Langlade, Marinette and Oconto Counties resulted in 25 percent defoliation as of July 9. (Wis. Coop. Sur.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - Extent of defoliation much reduced in MARYLAND and WEST VIRGINIA. In these states and PENNSYLVANIA, heavy defoliation was reported locally, however. In New Kingston, NEW YORK, over 5,000 acres of oak and other hardwoods were 90-100 percent defoliated, with heaviest feeding on oak rather than hard maple, the generally favored host when available. (Northeast. For. Pest Rpt., July 15).

EASTERN TENT CATERPILLAR (*Malacosoma americanum*) - Heavy infestation reported in Hudson Valley, NEW YORK, from New York City to Washington County, with as many as 20 tents per tree; elsewhere 2-3 tents present, but apparently infestation is increasing. Reported generally abundant throughout PENNSYLVANIA. Populations high but below 1959 level on Eastern Shore of MARYLAND, where first egg hatch occurred April 15. (Northeast. For. Pest Rpt., July 15).

ELM SPANWORM (*Ennomos subsignarius*) - NORTH CAROLINA - Defoliation somewhat less in Cherokee County than in 1959. In Clay and Graham Counties, defoliation restricted almost entirely to tops of ridges. (N. C. For. News Lett.).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - WISCONSIN - Still entering dead and dying elm wood. (Wis. Coop. Sur.). NEVADA - Found for first time in Boulder City, Clark County; adults presently active. (Bechtel, Lee, Zoller).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - IDAHO - Damage to elms increasing in Parma area; many untreated trees virtually defoliated, with treated trees showing feeding. Most larvae last instar. (Scott, July 8). OKLAHOMA - Infestations still of concern in counties from Arkansas-Oklahoma State line west to Kiowa County in southwest area, and from Noble County (north central) to Murray County (south central). (Okla. Coop. Sur.).

ELM BARK WEEVILS (*Magdalis* spp.) - ILLINOIS - Adults of *M. armicollis* collected from lower branches of elms in Knox County, and adults of *M. barbata* from same host in Tazewell County. Det. by J. Kingsolver. (Ill. Ins. Rpt.).

IMPORTED WILLOW LEAF BEETLE (*Plagioderia versicolora*) - MARYLAND - More abundant and destructive than usual on willows in suburban sections of Prince Georges County. (U. Md., Ent. Dept.).

A LEAF BEETLE (*Anomoea laticlavata*) - KANSAS - Adults ranged 25-30 per young locust tree in Franklin County July 5; made annual migration from weeds to locusts. Complete defoliation threatened, but prompt controls reduced major injury to trees in row ends in nursery. (Thompson).

OBSURE SCALE (*Chrysomphalus obscurus*) - MARYLAND - Heavy infestations on oaks in Queen Annes and Prince Georges Counties. (U. Md., Ent. Dept.)

A SPIDER MITE (Tetranychus sp.) - NEVADA - Heavy and causing leaf drop of willows in farmyards in Lathrop Wells area, Nye County. (Bechtel, Zoller).

BIRCH LEAF MINER (Fenusa pusilla) - OREGON - Severely damaged several nursery plantings of young birch trees in Gresham-Portland area. (Larson).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Very destructive to evergreens at localities in Prince Georges and St. Marys Counties. (U. Md., Ent. Dept.). NORTH CAROLINA - Defoliating cedar, climbing rose and holly in Orange County (Wray) and injuring Virginia pine in Randolph County (McGee, N. C. For. News Lett.). OKLAHOMA - Most commonly reported pest of ornamentals, mostly from eastern half of State; some localized infestations of evergreens also noted in southwest area. (Okla. Coop. Sur.). KANSAS - Counts of 200 per plant on all evergreens examined in Franklin County on July 6. (Thompson). MISSOURI - Infesting junipers at Columbia. (Wkly. Rpt. Fr. Gr.). ILLINOIS - Abundant on evergreens in some sections of State; also common on sycamore. Vary three-eighths to one-half inch in length. (Ill. Ins. Rpt.).

JAPANESE BEETLE (Popillia japonica) - PENNSYLVANIA - Causing extensive damage to unprotected ornamentals, flowers and shade trees. (Ins. Notes, July 11). MARYLAND - Adults continue destructive to ornamentals in suburban areas; generally heavier than during 1959. (U. Md., Ent. Dept.). NORTH CAROLINA - Feeding heavily on willow foliage in Cumberland County. (Wray). INDIANA - Emerged July 9 in West Lafayette, Tippecanoe County; damaged ornamentals July 13 at Logansport, Cass County. (Matthew).

ASIATIC GARDEN BEETLE (Autoserica castanea) - MARYLAND - Adults heavy on American holly at Hyattsville. (U. Md., Ent. Dept.).

POPLAR AND WILLOW BORER (Sternochetus lapathi) - RHODE ISLAND - Causing heavy damage locally on pussywillow in Fiskeville area, July 7 (Hansen).

WEEVILS - CALIFORNIA - Anthonomus ater medium on tarweed in Placerville, El Dorado County. (Cal. Coop. Rpt.). MISSOURI - Ceutorhynchus erysimi collected from shepherdspurse (Capsella bursa-pastoris) is a new record for the State. Det. by R. E. Warner. (Munson, Thomas, Wood).

A HOLLY LEAF MINER (Phytomyza sp.) - DELAWARE - Young larvae appearing in American holly in eastern Sussex County; mines less than one-quarter inch long. (Burbutis, Mason).

EUONYMUS SCALE (Unaspis euonymi) - MARYLAND - Heavy on euonymus at several localities in Anne Arundel and Prince Georges Counties; crawlers now active. (U. Md., Ent. Dept.).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - Immature and adult occurrence to date indicates below-normal populations for coming summer in most of State. Populations in Sacramento Valley slightly above those indicated by 5-year medium. Has been early fluctuation in populations of all species, including Culex tarsalis; however, another dry season indicates most of State will go through summer with population below this medium. (Vect. Cont.). C. erythrothorax medium in Watsonville area, Santa Cruz County. (Cal. Coop. Rpt.). NEVADA - Adults of unspecified species bothersome in Searchlight, Clark County; larvae breeding in cesspools. (Nichols). UTAH - Mosquito populations troublesome in areas of Daggett, Cache, Rich, Tooele, Duchesne, Uintah and Carbon Counties, but somewhat below average in abundance. Larval counts ranged 0-125 per dip in Price-Wellington area. Weber County light trap counts indicate: Culex tarsalis increasing, but lower than at same time in 1959; Aedes dorsalis counts lowest in history; A. nigromaculis below 1959 level;

Culiseta inornata lower than at this time in 1959, but exceeding most season counts during June; Aedes increpitus much lower than in 1959. A total of 17,500 acres treated for control. (Knowlton). WYOMING - Infestations of unspecified species heavy near Lone Tree and Ft. Bridger, Uinta County, and near Saratoga, Carbon County. (Fullerton). WISCONSIN - Extremely large populations of the principal biting species, Aedes vexans, will be present for a few weeks; pupation, July 13, expected to result in emergence, July 15. The marked mosquito increase is correlated with heavy rainfall and flooding of July 2; high numbers will probably hold for other areas which experienced similar conditions. Generally, the early population subsided in southern counties, but persisted in northern areas. Mosquitoes have kept many cattle from grazing at night. (Wis. Coop. Sur.). MARYLAND - Aedes grossbecki adults taken near wooded area at Grasonville, Queen Annes County, June 7; this is rare species in State. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - IOWA - Found for first time in Polk County by Dr. J. L. Laffoon on July 7. Cattlemen in eastern area very much concerned; young calves pestered severely. Several other flies contributing to problem. (Iowa Ins. Inf., July 11). ILLINOIS - Populations increased noticeably in northern section of State; averaged 8 per head on dairy and beef cattle herds on pastures. Continued hot weather should bring a greater buildup. Many animals examined had watering eyes and were obviously bothered by the flies. Herds were bunched and twitching their ears and shaking and rubbing their heads instead of grazing. (Ill. Ins. Rpt.).

HOUSE FLY (Musca domestica) - NORTH CAROLINA - Populations in restaurants in southeastern area worse than for many years. (Farrier). ALABAMA - Heavy infestations in steer feed lots in Henry County. (Grimes). UTAH - Annoyingly abundant at Manila, Daggett County. Numerous about some camp grounds in Uintah Mountains, Logan Canyon, and about some ranches in northern section of State. (Knowlton).

FLIES - WISCONSIN - Fly problem has increased; pasture and bloodsucking species bothering a majority of cattle herds. Many owners applying controls. (Wis. Coop. Sur.). ARIZONA - Large numbers of an unidentified species a problem on poultry in Greenlee County. (Ariz. Coop. Sur.).

HORN FLY (Siphona irritans) - ILLINOIS - Averaged 45 per animal in northern half of State. (Ill. Ins. Rpt.). OKLAHOMA - Most commonly reported livestock pest during past reporting period, with most concern in eastern half of State. (Okla. Coop. Sur.). UTAH - Numerous and annoying cattle in Randolph-Woodruff area, Rich County, and in several areas of Daggett and Uintah Counties; extremely numerous on cattle in Price-Wellington area of Carbon County and numerous over much of Uintah Basin. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations down in Payne County; averaged 8-10 per mature untreated animal checked, primarily in dairy herds. Causing concern in Pawnee and Murray Counties. (Okla. Coop. Sur.). ILLINOIS - Averaged 7 per animal in northern half of State. (Ill. Ins. Rpt.).

TABANIDS - ALABAMA - Light to moderate numbers of Tabanus spp. in Lee County. (K. Hays). ILLINOIS - Unspecified species occasionally observed in northern half of State. (Ill. Ins. Rpt.). OKLAHOMA - Medium to heavy Tabanus spp. populations common in favorable areas of central and east central sections; averaged 1 per animal in herd of Shetland ponies in Logan County. (Okla. Coop. Sur.). NEBRASKA - T. lineola bothering some riding horses in Brown County. (Simpson). WYOMING - Adult Tabanus spp. causing serious annoyance to man and animals in Lone Tree and Ft. Bridger areas. (Fullerton). UTAH - Tabanus spp. and Chrysops spp. numerous and troublesome throughout agricultural areas of Duchesne, Uintah, parts of Carbon, as well as Daggett and Rich Counties; very troublesome to horses, cattle and man in some areas. (Knowlton). Also numerous and troublesome to man and livestock in Manti-Ephraim meadows. (Thornley).

BLACK FLIES - UTAH - Unspecified species abundant and very annoying to cattle and sheep on some farms near Price, Carbon County, and in Bonanza area of Uintah County. (Knowlton). MAINE - Some slight reduction of Simulium sp. in some localities by July 8; activity apparently resumed July 10-11. (Boulanger).

THEREVIDS - UTAH - Adults abundant and annoying in Franklin Basin area, upper Logan Canyon of Cache County. (Knowlton).

A TROPICAL CATTLE TICK (Boophilus microplus) - FLORIDA - Infestations found on May 31 and June 20, for first time since 1957. State quarantine was placed on a triangular area on the east coast, involving parts of Martin and Palm Beach Counties, and on 2 premises in Hillsborough County. Eradication program now underway. (Animal Dis. Erad. Div.).

TICKS - NORTH CAROLINA - Two cases of canine tick paralysis reported by State Veterinarian in June. Causative species unspecified. (Farrier). OKLAHOMA - Infestations common on cattle in Choctaw and Sequoyah Counties. (Okla. Coop. Sur.).

CHIGGERS - PENNSYLVANIA - Troublesome in southern two-thirds of State. (Ins. Notes, July 11). LOUISIANA - Very abundant in all areas of State. (Spink).

#### BENEFICIAL INSECTS

LADY BEETLES - SOUTH DAKOTA - Larvae and adults of Hippodamia spp. numerous in all clover and alfalfa fields checked in east central area. (Mast). WYOMING - Hippodamia sp. averaged 3 adults and 1 larva per 25 sweeps in each of 15 alfalfa fields in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton). COLORADO - Hippodamia sp. averaged 100-300 per 100 sweeps of alfalfa in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). CALIFORNIA - Lindorus lophantae medium in plum trees in Orangevale, Sacramento County. (Cal. Coop. Rpt.). OKLAHOMA - Light to medium H. convergens populations noted in alfalfa, grain sorghum and cotton fields surveyed in State. (Okla. Coop. Sur.). ILLINOIS - Unspecified species averaged 16 adults and 12 larvae per 100 sweeps in eastern and central area alfalfa and clover. (Ill. Ins. Rpt.).

MELYRIDES (Collops spp.) - WYOMING - Averaged 15 adults in each of 15 alfalfa fields in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton).

NABIDS (Nabis spp.) - SOUTH DAKOTA - Numerous in east central area yellow and red clover. (Mast). WYOMING - Adults averaged 5 per 25 sweeps in each of 15 fields of alfalfa in Sublette, Lincoln, Uinta and Carbon Counties. (Fullerton). OKLAHOMA - Light numbers common in alfalfa checked in southern half of State. (Okla. Coop. Sur.). ILLINOIS - Averaged 25 per 100 sweeps of clover and alfalfa in central and eastern sections. (Ill. Ins. Rpt.).

LACEWINGS (Chrysopa spp.) - SOUTH DAKOTA - Larvae numerous on alfalfa and clover in Moody, Minnehaha and Brookings Counties. (Mast). OKLAHOMA - Occasional to light in alfalfa and cotton fields surveyed over State. (Okla. Coop. Sur.). ILLINOIS - C. oculata averaged 3.2 adults and 6 larvae per 100 sweeps in eastern and central area alfalfa and clover fields. (Ill. Ins. Rpt.).

A FLOWER BUG (Orluis insidiosus) - OKLAHOMA - Light populations becoming increasingly common in alfalfa and cotton fields checked throughout State. (Okla. Coop. Sur.).

MISCELLANEOUS INSECTS

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW JERSEY - Infestation found in Jersey City, Hudson County; determination made July 6. This is the first record in the State. Delimiting surveys continuing in the area. The infestation appears to be extremely light and limited. (Boyd, July 13).

JAPANESE BEETLE (*Popillia japonica*) - RHODE ISLAND - Controls applied at commercial airfield at Hillsboro; population heavy within one-quarter mile of landing strip. Controls also applied at Navy airfield at Quonset; population light. MASSACHUSETTS - Populations light at Westover AFB, Otis AFB and the Navy airfield at Weymouth; medium at Hanscom AFB and Worcester municipal airfield; and heavy at Coast Guard airfield at Salem. Controls have been or will be applied at all these points. No beetles found at Logan International Airport. CONNECTICUT - Populations very light at Bradley Field, Windsor Locks, and New Haven Municipal Airport; controls to be applied. Numbers light at Brainard Field, Hartford Municipal Airport; medium at municipal airports at Bridgeport, Danbury and Meriden; and heavy at Rentschler Airport, East Hartford; controls applied. NEW JERSEY - Population buildup encountered in localized areas throughout State; heaviest concentrations occurred at points in Atlantic, Burlington, Mercer, Camden, Union, Bergen, Gloucester and Cumberland Counties. McGuire AFB and Air National Guard and National Aviation Facilities Experiment Center under hazardous designation; commercial fields under this designation are Teterboro Airport at Hackensack and Eastern Airlines at Pomona. Planes at all these fields undergoing treatment before takeoff and foliage treatments being applied. Close surveillance being maintained at Newark Airport, as buildup increased in vicinity. Baggage personnel checking baggage before loading. Further buildup will necessitate plane treatments. PENNSYLVANIA - Flight activity continues at high level at Philadelphia International Airport; decrease indicated. Adults now present statewide, with heavy infestations quite spotty. Observations indicate heavy infestation remains in North Philadelphia-Norristown-Cheltenham area. Heavy infestations in Williamsport and Connellsville areas; continues light at Greater Pittsburgh Airport, with all precautions being taken. Foliage treatments applied one or more times at Connellsville, Pittsburgh, Erie, Williamsport, Philadelphia and Olmstead Airports. (PPC).

DELAWARE - No beetles observed at Dover AFB. Population remains fairly heavy at New Castle County Airport; aerosoling of planes and treatment of field continuing. MARYLAND - Beetles still flying around loading ramps at Friendship Airport. Beetles remain fairly heavy on outlying areas at Andrews AFB, but very few are around loading sites. Numbers increasing in western section of State; however, no hazardous locations declared to date. Few at Hagerstown Airport. Some feeding signs and spot infestations observed at Frederick Airport, but very few beetles in flight. These two points being closely watched. VIRGINIA - Emergence believed close to peak in area south of line from Fredericksburg to Charlottesville; increased emergence reported north of this line, but not yet at peak. Conditions at infested commercial fields in State good, with populations held to a minimum by timely and effective controls. Aerosoling required at privately-owned field at Charlottesville. Spotted, heavy feeding again reported in 24 counties. Infestations remain none to light in 2 Eastern Shore counties, and the same in Brunswick, Greenville, Halifax and Mecklenburg Counties. Only 1 beetle found near loading ramps at Washington National Airport. WEST VIRGINIA - Peak emergence not yet reached; expected within 7-10 days. Some spotted, heavy feeding and brown-ing evident in Braxton, Gilmer, Hampshire, Jefferson, Kanawha, Lewis, Tucker, Tyler and Upshur Counties. Conditions at all airports reported good; infestations reduced to a minimum by effective controls. (PPC). OHIO - Infestations exceptionally heavy in Ross, Coshocton, Wayne and Allen Counties; also reported from Summit, Tuscarawas and Holmes Counties. (Blair, Holdsworth).

GREEN JUNE BEETLE (*Cotinis nitida*) - DELAWARE - Heavy adult flights noted in New Castle and Sussex Counties. (Burbutis, Mason).

NORTHERN MASKED CHAFER (Cyclocephala borealis) - MARYLAND - Adult numbers at lights reached peak week of July 10 in suburban Prince Georges County. (U. Md., Ent. Dept.).

A JAPANESE WEEVIL (Calomycterus setarius) - RHODE ISLAND - Tremendous numbers climbing foundations and entering homes, locally, in Cranston area. (Mathewson, July 8).

OLD-HOUSE BORER (Hylotrupes bajulus) - ALABAMA - Larvae causing extensive tunnelling of pine paneling in Baldwin County. (Lemons).

A PYRAUSTID (Pyrausta futilalis) - DELAWARE - Larvae very abundant on dogbane in New Castle County. (Burbutis, Mason).

A CICADA (Tibicen auletes) - OKLAHOMA - Adults emerging in Stillwater area, Payne County. (Okla. Coop. Sur.).

RED HARVESTER ANT (Pogonomyrmex barbatus) - OKLAHOMA - Activity continued to become more evident in Payne County. (Okla. Coop. Sur.). TEXAS - Heavy and widespread swarms of queens and kings observed in Taylor County, following recent rains. (Turney).

A BEE MITE (Acarapis dorsalis) - CONNECTICUT - Found on bees at Goshen, New Canaan and Litchfield. Det. by F. Shaw. This is a first report for the State. (Johnson).

#### CORRECTIONS

CEIR 10(23):471 - AMERICAN DOG TICK (Dermacentor variabilis) - INDIANA - Should be changed to read: "Adults active in Dubois and Dearborn Counties May 24 and 26, respectively. (Schuder)."

CEIR 10(25):515 - ALFALFA WEEVIL (Hypera postica) - Note under NEBRASKA indicating this species collected in Dawson County should be deleted.

CEIR 10(28):624 - A WEEVIL (Barbypeithes pellucidus) should read A WEEVIL (Barypeithes pellucidus).



LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	Protoparce quinq.	Heliothis zea	Heliothis vires.
<b>ALABAMA</b>								
Fairhope 7/11			2	1		6	29	1
Auburn 7/14	9		13			3	2	4
<b>ARKANSAS</b>								
Hope 7/7-13	27	4		3			2	
*Morrilton 7/7-13	19	9					21	
Kelso 7/7-13	13	7					67	
Fayetteville 7/7-13	9	1					36	
<b>DELAWARE</b>								
Bridgeville 7/8-14	51		10			6	1	9
<b>ILLINOIS</b>								
Urbana 7/8-14	539	19		174		10		5
<b>INDIANA (Counties)</b>								
Lawrence 7/5-11	118	7		21		16	11	
Tiptecanoe 7/8-14	202	11		17		1	2	
Vanderburg 7/7-12	101	3	1	5		2	1	2
<b>KANSAS</b>								
Garden City 7/5-8,11	114	57		51		1	5	1
Hays 7/7-9,12	359	26		71				11
Manhattan 7/7-13	127	34		52		2		6
Wathena 6/29-7/4, 6-10	150	69		32			6	1
<b>LOUISIANA</b>								
Tallulah 7/9-15	1		20					7
<b>MARYLAND</b>								
Fairland 7/2-14	17	15		3		7	12	4
<b>MISSOURI</b>								
Columbia 7/11-15	198	41	20	19				
Sikeston 7/9-15	22	11		5				8
<b>NEBRASKA</b>								
Concord 6/21-30	1,134	62		16				
Kearney 6/29, 7/5	235	73		71		2	5	20
North Platte 6/30- 7/6	606	192		120		2	2	8
Scotts Bluff 6/30-7/6	140	34		42				4
<b>NEW JERSEY</b>								
Sutton 7/11	14	3	1			2	3	1
Traino 7/11	35	10	2			2	1	4
<b>SOUTH CAROLINA</b>								
Charleston 7/3-17	3	2	90	1		42		14
<b>TENNESSEE (County)</b>								
Blount 7/4-11	25	7	93	5		1	8	8

\* Two traps - Morrilton.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	Heliothis zea	viros.
<u>TEXAS</u>							
Waco 7/8-15	27	3	109	50		2,482	34
<u>WISCONSIN</u>							
*Janesville 7/5-11	61						
Waterford 7/5-11		27					
Middleton 7/5-11	12	8		4			
*Arlington 7/5-11	252	8		4	1	1	
*Theresa 7/5-11	55						
Oakfield 7/5-11	26					4	
Fairwater 7/5-11	4					1	
*Ripon 7/5-11	13						
Green Bay 7/5-11	5	1					

\* Two traps - Janesville; 2 traps - Arlington; 3 traps - Theresa; 2 traps - Ripon.

ADDITIONAL NOTES

NEW YORK - RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) adults appeared in codling moth bait traps July 11 in Niagara County; one egg mass found July 15. EUROPEAN CORN BORER (Pyrausta nubilalis) mostly in final instar in ears and tassels of sweet corn in Hudson Valley area; substantial hatch of second brood not expected before August. Earliest untreated corn heavily infested in Westchester County. CORN EARWORM (Heliothis zea) larvae in fourth to sixth instars in 15 of 700 ears of sweet corn checked on July 12 at Poughkeepsie. First FALL WEBWORM (Hyphantria cunea) nests observed in Tompkins County. In Poughkeepsie area, JAPANESE BEETLE (Popillia japonica) more abundant than usual at some places and MOSQUITOES annoying in some areas. (N. Y. Wkly. Rpt.).

MAINE - STRIPED CUCUMBER BEETLE (Acalymma vittata) moderate on cucurbits; damage moderate. IMPORTED CABBAGEWORM (Pieris rapae) becoming heavy on cole crops. Damage light but should increase rapidly. A LEAF MINER, probably Pegomya hyoscyami, moderate with moderate damage on spinach and beets. APPLE APHID (Aphis pomi) generally light to moderate statewide; damage light to date. APPLE MAGGOT emergence not yet at peak level; expected July 18-22. Female to male ratio about 2:1 on July 13. Emergence almost completed on low-bush blueberries; only stragglers now appearing in emergence cages. JAPANESE BEETLE light, with some damage to several plant species in Lewiston area; and WOOLLY APHIDS, probably Prociphilus tessallatus causing moderate damage to maples in Lewiston-Auburn area. (Boullanger).

VERMONT - APPLE MAGGOT (Rhagoletis pomonella) beginning to emerge in orchards. First adult trapped in Springfield July 11. Blueberries severely infested for over 3 weeks at Putney. POTATO LEAFHOPPER (Empoasca fabae) nymphs becoming more numerous in alfalfa. (MacCollom).

IOWA - STABLE FLY (Stomoxys calcitrans) numbers increasing rapidly and FACE FLY (Musca autumnalis) collected in Des Moines County, July 11. STALK BORER (Papaipema nebris) apparently more abundant than normal in field crops and EUROPEAN CORN BORER first-brood survival much greater than in 1959. CORN LEAF APHID (Rhopalosiphum maidis) present in tassels and whorls of corn in central area and SQUASH VINE BORER (Melittia cucurbitae) moths active in central area. (Iowa Ins. Inf.).

IDAHO - CLOVER APHID (Anuraphis bakeri) populations increasing on red clover in southwestern area. Numbers considerably below those of July 1959. LYGUS BUGS (Lygus elisus and L. hesperus) higher than in any year since 1956 in carrot umbels in Parma area. PEAR-SLUG (Caliroa cerasi) larvae damaging cherry trees near Emmett and Parma. (Waters, Scott).

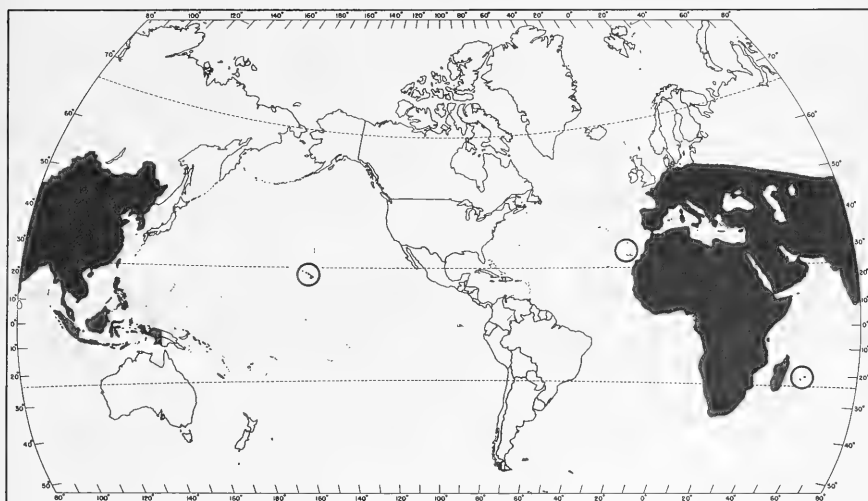
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES\*

BEAN BUTTERFLY (Lampides boeticus (L.))

Economic Importance: This lycaenid is injurious to legumes in many areas of the world, particularly in the Mediterranean Region and North Africa. It occurs commonly on beans in Japan and legumes in Hawaii. The insect is generally considered to be a minor pest in many parts of its range, only occasionally building up to serious proportions in local areas. Larvae have been intercepted on numerous occasions at U. S. ports of entry.

Distribution: Most of Africa, Central and Southern Europe, Western and Central Asia and Pacific Islands, including Hawaii. Also Mauritius, Canary Islands, Madagascar.

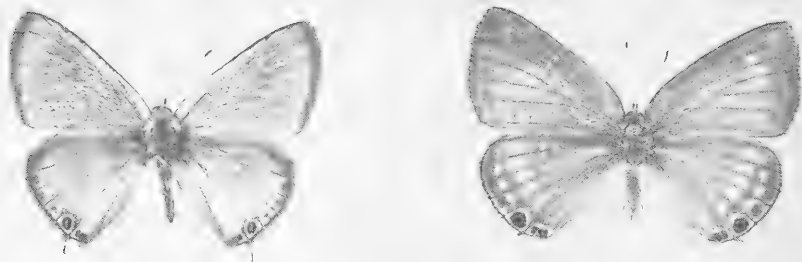
Hosts: Legumes including beans, soybeans, peas, cowpeas, vetch, alfalfa, crotalaria and possibly other hosts.



General Distribution of Lampides boeticus (L.)

Life History and Habits: The biology of L. boeticus is not too well known. Eggs are deposited on flowers, pods and buds of the plant. The larvae feed on the flowers, seeds and occasionally in the stalks. In France, the larvae are common in peas from June to August. They pupate on plants or in debris and adults emerge in August and September. There appears to be only one generation a year in France but two or more are reported from other areas.

Description: ADULT wingspread 28 to 30 mm. Wings are bright blue with velvety reflections. In the female, forewings are bordered with black on the external margin while in the male, they are distinctly smoky around the margins. The hindwings are the same color and are provided at the posterior extremity with a small, thin black tail. From the lower side, they show two black points in the female and a series of large black points in the male. In the latter, the hindwings are deeply smoky colored at the base with a reddish-orange reflection. The underside is more or less dark, peppered with gray and white, and spotted with two black, orange-bordered points situated near the base of the hindwing. Full-grown LARVA is about 10 mm. long; thick; variable colored, deep green or brown-red with a dark dorsal line and a series of clear oblique, lateral lines on each segment. The spiracles are circled in white. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(30): 7-22-60.



Female and Male of Lampides boeticus (Dorsal View)



Female of L. boeticus (Ventral View)



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**ECONOMIC INSECT  
REPORT**

*Issued by*



**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

EUROPEAN CORN BORER infestations appear greater than in 1959 in North Dakota and second generation expected to be more severe in Illinois than in 1959; some controls being applied in Nebraska. Damage much greater in west central and northwestern Ohio; moderate to heavy in Pennsylvania; and unusually heavy in Virginia. (pp. 699, 700, 721). FALL ARMYWORM heavy in areas of Alabama and Louisiana; found in Colorado. (p. 700). CORN LEAF APHID continues damaging to grain crops in number of states. (pp. 700, 701).

SPOTTED ALFALFA APHID increasing rapidly in Stanislaus County, California, and is heavy in parts of Arizona, New Mexico and Oklahoma. First reports of season from Colorado and Nebraska. (p. 702). LYGUS BUGS at economic levels in alfalfa in several western states. (p. 703).

CODLING MOTH larval entries in apples reported in New York, Ohio, Indiana, Illinois, Missouri and Minnesota; and APPLE MAGGOT emergence noted in Ohio, Wisconsin and Minnesota. (pp. 705, 721). ORCHARD MITES caused bronzing of fruit-tree leaves over wide area; damage severe in some cases. (pp. 706, 721). GRAPE ROOT BORER heavy on grapevines in Steelville area of Missouri; first severe damage in a number of years. MEXICAN FRUIT FLY trapped at Tijuana, Baja California, Mexico, in late June. (p. 707).

APHIDS increasing on potatoes in Massachusetts and Delaware and high in an area of Weld County, Colorado. POTATO LEAFHOPPER increasing on potatoes in Virginia and northwest Pennsylvania; common in Delaware. (p. 708). BEET WEBWORM damaging sugar beets in New Mexico and North Dakota and SUGAR-BEET ROOT MAGGOT caused an estimated three-ton-per-acre reduction in yield in sugar beet field in Idaho. (p. 710).

COTTON LEAFWORM found in Desha County, Arkansas. (p. 713).

FALL WEBWORM becoming more abundant throughout southern New Mexico; continues more general than past 3 years in Arkansas; and nests becoming conspicuous in Kennebec County, Maine. (pp. 714, 721). ELM LEAF BEETLE continues damaging in a number of states; becoming severe in others. (pp. 715, 721). MIMOSA WEBWORM damage appearing in New Jersey and severe on mimosa and honeylocust in southern Maryland. (p. 716).

HORN FLY increasing in Alabama and in areas of Missouri and Utah; causing concern in eastern Oklahoma. (p. 717).

JAPANESE BEETLE remains hazardous around airports in several eastern states; adults decreasing at many places, however. (p. 719).

CORRECTIONS (p. 721).

ADDITIONAL NOTES (p. 721).

INSECT DETECTION: A scale insect (Kuwanaspis hikosani) reported established for first time in United States at Aiken, South Carolina. (p. 716). New state records reported were satin moth in California (p. 720), an aphid (Phorodon menthae) in New Jersey (p. 708), and an introduced flea beetle (Phyllotreta cruciferae) in Wisconsin (p. 709). New county records reported were alfalfa weevil in Allegheny and Jefferson Counties, Pennsylvania (p. 703); soybean cyst nematode in Crockett County, Tennessee (p. 704); mimosa webworm in Baker County, Florida (p. 716); and face fly in Frederick County (p. 717) and a Japanese weevil (Calomycterus setarius) in Washington County, Maryland (p. 720). (Continued on page 698).

Highlights of Insect Conditions (Continued)

HAWAIIAN insect notes. (p. 723).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 724).

Status of some IMPORTANT INSECTS in the United States. (p. 725).

INSECTS not known to occur in the United States. (p. 727).

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Reports in this issue are for week ending July 22, unless otherwise indicated.

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#### WEATHER OF THE WEEK ENDING JULY 25

The features of this week's temperature pattern were sharply above-normal warmth in California, inland sections of the Pacific Northwest, the Plateau, and the northern Great Plains, and below-normal readings extending from Texas into the Great Lakes and Northeastern States, with maximum negative temperature departures centered in the Oklahoma-Kansas area and portions of the Great Lakes and Northeastern States. Near seasonal temperatures were recorded for the week in the Southeastern States, the Mississippi and lower Ohio Valleys, the southern Rockies, and coastal sections of the Pacific Northwest. Temperatures ranged as high as 6° to 13° above normal in interior California, and 5° to 10° above normal from the Dakotas to eastern Washington and southward to northern sections of Colorado and Nevada. At Salt Lake City, Utah, the ninth straight day of 100° or over maxima on the 22nd, and the 31st straight day of 90° or over maxima on the 24th were both alltime records for persistent heat there. Maxima reached 100° to 108° on several days in most of the Dakotas, and from 108° to 111° at several stations from Montana to eastern Washington the first part of the week. A cool, dry high pressure area covered the northeastern quarter of the Nation late in the week, bringing clear skies and unusually pleasant temperatures for late July.

Precipitation, mainly in the form of widely scattered showers and thunderstorms, brought generally light amounts to the Plateau States, portions of the northern Great Plains, and many sections from the Texas coast and the Mississippi Valley eastward. Locally heavy thundershowers were reported in the Southern States and Upper Michigan. Heavy rains in the Oklahoma-northwestern Arkansas-southern Kansas-southern Missouri area, with abundant cloudiness on several days, left temperatures 3° to 7° below normal for the week, and precipitation totals of more than 2 inches over a wide area. Rainfall totals ranged up to 9.61 inches at Fayetteville, Arkansas. At Phoenix, Arizona, 0.01 inch on the 23rd was the first measurable precipitation there in 143 days. Most areas in the West Coast States recorded no precipitation and, in many sections, 100 percent of the possible sunshine. Wide areas of the Rocky Mountains and central Great Plains, extending into Iowa, and many local areas in the Eastern States were also missed by precipitation. Soil moisture conditions vary greatly in the Eastern States, are generally good in the Texas-New Mexico area as a result of previous heavy rains, and are extremely short in most areas of the Western States.

A very favorable week for fieldwork was noted in the Middle West and good harvest weather prevailed in the central sections of the Great Plains and Rocky Mountains. This was the warmest week of the summer so far in Wisconsin and Iowa. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - IDAHO - General in Lewiston and Lapwai areas, Nez Perce County; counts 5-15 adults per square yard. Populations presently confined to range and scab land areas, but adults beginning to move into crops and gardens. (Kambitsch). OREGON - Heavy populations, predominantly Melanoplus bilituratus, defoliating shade trees and rabbitbrush in rather large areas southwest of Echo. (Chinn). UTAH - Spottedly numerous in parts of Millard, Kane and Davis Counties; damage moderate. Some moderate damage to margins of alfalfa fields noted in Piute, Wasatch and Summit Counties. (Knowlton). MONTANA - Infestation generally smallest in State in many years; no organized control programs planned. (Roemhild). NORTH DAKOTA - Light localized infestations in croplands in 26 counties; some controls applied in 19 counties. Treatments of threatening to severe infestations on rangeland in Slope, Golden Valley and McKenzie Counties near completion. Spot treatments to be applied in McLeod area next week. Counts 30 per square yard in rangeland area southeast of Watford City, McKenzie County; dominant species Ageneotettix deorum, with some Camulla pellucida. (N. D. Ins. Sur.). SOUTH DAKOTA - Grasshoppers increasing in most areas of State; eggs still hatching and many first instars present in north central area. (Mast). NEBRASKA - Traces of damage noted in margins of alfalfa, corn, sorghum and soybeans; species predominantly M. bivittatus. Counts average 10 per square yard. Predominant species in rangeland in southwest were A. deorum, Phliobostroma quadrimaculatum, Amphitornus coloradus and Phoetaliotes nebrascensis. (Pruess). KANSAS - Grasshopper counts in northeast and east central areas averaged less than 1 per square yard; M. femur-rubrum dominant species. (Peters). OKLAHOMA - Grasshoppers, several species, continue light on most range and pasture areas over State, with counts 0-8 per square yard. Heavier, 25-30 per square yard, along roadsides and idle land in many localities over State. Damage to crop margins commonly reported. (Okla. Coop. Sur.). NEW MEXICO - Moderate to heavy infestations being controlled on pastures in Taos and Rio Arriba Counties. (N. M. Coop. Rpt.). MINNESOTA - High populations in soil bank land in west central district. (Minn. Ins. Rpt.). WISCONSIN - Spotty, but threatening populations, present in Pepin County. Counts 35-45 per square yard in 15 fields; less in others checked. Damage beginning in fields with light counts. In Jackson, Trempealeau, Pierce, Buffalo, La Crosse, Crawford, Grant, Lafayette, Iowa, Vernon, Richland and Sauk Counties, high counts 20 per square yard; many fields had almost none, however. Predominant species M. femur-rubrum. (Wis. Coop. Sur.).

ILLINOIS - Populations ranged 2-6 per square yard along roadsides in west and southwest areas. (Ill. Ins. Rpt.). LOUISIANA - Several species of grasshoppers averaged 72 per 100 sweeps in soybeans in East Baton Rouge Parish. (Spink). RHODE ISLAND - Nymphs of undetermined grasshoppers very abundant in alfalfa in South Kingstown. (Hansen).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEBRASKA - Infestations range 6-82 percent; highest counts in central and eastern areas. Controls being applied in scattered fields throughout area. Occasional sorghum plants infested. (Simpson). SOUTH DAKOTA - Of fields checked, 28 percent shot-holed and only an occasional egg mass found. (Mast). NORTH DAKOTA - Shot-hole symptoms present on 59 percent of plants in Richland and Cass Counties; infestations ranged 36-84 percent. Larvae, first and second instars, averaged 236 per 100 plants. Infestations appear several times greater than those experienced in 1959. (N. D. Ins. Sur.). WISCONSIN - Infestations low in most corn; percentage of plants showing leaf feeding by counties was 3 in Dodge, 1 in Fond du Lac, 6 in Calumet and Manitowoc, 4.5 in Eau Claire, 9.4 in Jackson, 10 in Monroe, 26 in Juneau and 22 in Sauk. Larvae mostly second and third instar. (Wis. Coop. Sur.). ILLINOIS - Pupation in west and southwest areas averaged 8 percent. Pupation in Wichert area of Kankakee County, which is always early, was 20 percent. First-generation moth flight in north and west has never completely ceased, with an overlapping of generations probable; more noticeable than in past several years. Damage to late corn fields from second generation will be more severe than in 1959. In general, populations may increase noticeably over previous year. (Ill. Ins. Rpt.).

MICHIGAN - Spotted infestations on sweet corn in Sodus, Monroe, Mason, Grand Lodge, Grand Rapids, Lapeer and Millington. (Hutson). OHIO - At Columbus on July 8, early sweet corn 42 percent infested (damage negligible); 20 borers per 100 plants; first second-brood pupation observed. At Marietta on July 11, 3.5 percent of early sweet corn ears infested; infestation in stalks considerably higher; second-brood pupation underway. Early sweet corn at Wooster and Lima severely attacked. (Triplehorn). Damage in west central and northwestern areas much heavier than in 1959. (Blair, Friday). MARYLAND - Moderate to heavy in more advanced corn in Frederick and Howard Counties; second-generation egg masses light in late sweet corn in Calvert County. (U. Md., Ent. Dept.). DELAWARE - Adults remain active in corn. (Burbutis, Mason). VIRGINIA - Unusually heavy damage to corn, potatoes and tomato vines and some flower plants reported during first two weeks of July. (Rowell). NORTH CAROLINA - Some corn heavily infested in Yadkin County. (Smith, Farrier).

CORN EARWORM (Heliothis zea) - ALABAMA - Infestations in northern area increasing; 70-80 percent in older corn. (Grimes). Causing considerable lodging of corn in Lee County. (Barwood). OHIO - Infestations 62 percent at Marietta and 15 percent at Lima on early sweet corn. Infestation very light at Columbus on July 8. (Triplehorn). MISSOURI - Feeding as budworms in late corn in southwest area. (Munson, Thomas, Wood). NEBRASKA - Occasional larvae noted damaging plants in all counties surveyed. (Simpson). OKLAHOMA - Increasing in corn and grain sorghum, particularly in central, south central and southeast areas. (Okla. Coop. Sur.). TEXAS - Medium to heavy locally on grain sorghum heads in Robertson County (Doering) and on foliage of peanuts in Frio County (Smith). NEW MEXICO - Caused light to moderate damage to corn throughout State. (N. M. Coop. Rpt.). UTAH - Moths collected in Weber and Utah Counties. (Knowlton). CALIFORNIA - This species, Spodoptera exigua and Prodenia praefica light on corn in Centerville, Fresno County. (Cal. Coop. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Development of second generation strung out; pupation still occurring whereas eggs and young larvae have been present a week or longer in some fields. (Ark. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Severe larval damage continues to field peas and corn in central area. (Grimes). Destroyed one-third of corn stand in Clarke County. (O. C. Helms).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Infestations continue to increase in Mobile County; heavy on grasses and millet throughout southern half of county. (Knight, Seibels). LOUISIANA - Spotty, heavy infestations on young millet in Washington Parish; larvae 0-75 per sweep. Small larvae also present in grass pastures. Controls applied in some instances. (Spink). COLORADO - Larvae found in corn in some areas of Prowers, Bent and Otero Counties. (Colo. Ins. Sur.).

ARMYWORM (Pseudaletia unipuncta) - OKLAHOMA - Causing moderate damage to grain sorghum in localized areas of Dewey County. (Okla. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Medium locally on grain sorghum in Robertson County. (Doering).

CORN LEAF APHID (Rhopalosiphum maidis) - CALIFORNIA - Heavy in sweet corn in Santa Ana, Orange County. (Cal. Coop. Rpt.). UTAH - Infestations moderate in barley in Pleasant Valley, Duchesne County. (Knowlton). NEW MEXICO - Light infestations of alates in corn in Dona Ana County. (N. M. Coop. Rpt.). OKLAHOMA - Numerous in grain sorghum in localized areas of central, north central, northeast and east central areas. (Okla. Coop. Sur.). NEBRASKA - Light to moderate on most corn and sorghum. (Simpson). SOUTH DAKOTA - Small numbers on corn in eastern area. (Mast). NORTH DAKOTA - Heavy infestations continue in late-planted barley in northeast; some fields being plowed under because of aphid injury and drought conditions. (N. D. Ins. Sur.). MINNESOTA - Numerous in whorls of corn. Heavy infestations present in late barley in northwest; a few fields of barley completely destroyed and plowed under. Early planted barley apparently

escaped damage. (Minn. Ins. Rpt.). MISSOURI - Damaging grain sorghum in west central area. (Munson, Thomas, Wood). TENNESSEE - Heavy on sorghum in Cheatham County. (Mullett). ALABAMA - Moderate on corn in Madison and Lauderdale Counties; beneficials controlling infestations most areas. (Grimes). INDIANA - About 50 percent of corn planted May 24 lightly infested at Agronomy Farm (Lafayette), Tippecanoe County. (Everly). OHIO - Infestations not found in Marion and Wayne Counties as of July 15 (Triplehorn) and in west central area (Blair). Not present in Lucas and Henry Counties, but readily found on emerging tassels of corn in Van Wert County. (Friday, July 21). Found in Ottawa County and not at economic levels in Franklin County. (Holdsworth, Grimm; July 20). DELAWARE - Alates dispersing through corn fields; young colonies increasing. (Burbutis, Mason).

GRAIN APHIDS - WISCONSIN - Counts per sweep in oats by counties as follows: Macrosiphum granarium - Eau Claire 32, Jackson 16.8, Monroe 11.5, Juneau 33.4, Sauk 29, Dodge 40, Fond du Lac 21, Calumet and Manitowoc 42.5; Toxoptera graninum - Calumet 14, Eau Claire 6.6, Juneau 8, Manitowoc and Jackson 1, and Sauk 0.4. (Wis. Coop. Sur.). IDAHO - M. granarium common on wheat in irrigated areas of south central area; counts 5-10 per head in 2 wheat fields near Filer which have reached soft-dough stage. (Gittins).

A MIRID (Labopidea sp.) - MONTANA - Very numerous in some winter wheat in Liberty County during period June 15 - July 15. (Roemhild).

CONCHUELA (Chlorochroa ligata) - CALIFORNIA - Medium infestation on corn in Lincoln, Placer County. (Cal. Coop. Rpt.).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Infestations severe enough on small grains and alfalfa to require controls in Delta area of Millard County. (Haws).

CHINCH BUG (Blissus leucopterus) - MISSOURI - Damaging small grain sorghum in west central area. (Munson, Thomas, Wood). TEXAS - Light to medium locally on corn in Guadalupe County. (Massey). PENNSYLVANIA - Moved from wheat to corn in Snyder County; light infestation. (Gesell).

CORN BLOTCH LEAF MINER (Agromyza parvicornis) - DELAWARE - Mines common and becoming quite noticeable in corn in Kent and Sussex Counties. (Burbutis, Mason).

CORN ROOTWORMS (Diabrotica spp.) - COLORADO - D. virgifera adults damaging terminal growth of corn in Weld County; controls being applied. (Colo. Ins. Sur.). NEBRASKA - Heavy damage in southeastern quarter of State; in one one field in Thayer County, 7 consecutive plants pulled up with roots heavily damaged. Adults of D. virgifera noted, first of season, and D. undecimpunctata howardi adults increasing. (Simpson). TENNESSEE - D. longicornis adults heavy and serious on silking corn in counties along western arm of Tennessee River. (Mullett). ALABAMA - D. undecimpunctata howardi light to moderate on young corn in Lee County. (Barwood).

SAP BEETLES - NORTH CAROLINA - Carpophilus lugubris injuring sweet corn generally in Yadkin County, with severe infestations noted. (Mulder, Farrier). DELAWARE - C. lugubris adults very common in corn in Sussex County. (Burbutis, Mason). MARYLAND - C. lugubris adults numerous in corn infested with European corn borer and corn earworm in all sections. (U. Md., Ent. Dept.). OHIO - Only 1 percent of early sweet corn ears from untreated plots showed primary sap beetle (mostly C. lugubris) infestation at Marietta on July 11. Sap beetles found as secondary invaders in 8.75 percent of ears harvested in same test. Sap beetles (mostly Glichrochilus quadrisignatus) found in 42.5 percent of stalks and ears of early sweet corn in untreated check plots at Columbus on July 8. In every instance, sap beetles found associated with either European corn borer or corn earworm damage. (Triplehorn).

GREEN JUNE BEETLE (Cotinis nitida) - MARYLAND - Adults noted on corn ears in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.).

BLUEGRASS BILLBUG (*Calendra parvula*) - IDAHO - Continues to cause damage to lawns in eastern parts of Twin Falls city, especially in less well cared for lawns. (Gittins).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - UTAH - Occasionally noted on corn in south central area. (Knowlton). COLORADO - High on lower 4 leaves of corn plants in Weld, Larimer and Adams Counties; moderate on lower leaves of corn in Otero County. (Colo. Ins. Sur.). IDAHO - Building up rapidly in some alfalfa in southeastern area; migrations to potato fields expected when cutting of hay begins in late July. (Gittins).

A SPIDER MITE (*Oligonychus stickneyi*) - NEW MEXICO - Building up on corn in Sandoval, Bernalillo, Torrance and Dona Ana Counties. (N. M. Coop. Rpt.).

SOUTHERN GREEN STINK BUG (*Nezara viridula*) - ALABAMA - Moderate infestations in pastures in Salem community of Lee County. (Barwood).

A FALSE CHINCH BUG (*Nysius* sp.) - ARIZONA - Adults and nymphs heavy on bluegrass lawns in Flagstaff area, Coconino County. (Ariz. Coop. Sur.).

A SOD WEBWORM (*Crambus mutabilis*) - OKLAHOMA - Damaging lawns in Ellis County. (Okla. Coop. Sur.).

THRIPS - OKLAHOMA - Light to moderate in some peanut fields in south central and southeast areas. (Okla. Coop. Sur.). DELAWARE - A thrips, probably *Anaphothrips obscurus*, remains numerous in axils of corn; injury not abundant. (Burbutis, Mason).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - CALIFORNIA - Generally light in alfalfa in Stanislaus County until this week when hot weather caused a rapid increase; some fields severely infested. (Cal. Coop. Rpt.). ARIZONA - Continues heavy in alfalfa in southern area; in northern area, only few fields with very light populations. (Ariz. Coop. Sur.). NEW MEXICO - Light to heavy and extremely spotty in Hidalgo, Luna, Dona Ana, Eddy, Chavez and Lea Counties. (N. M. Coop. Rpt.). UTAH - Generally low to moderate in Washington, Kane and Millard Counties. (Knowlton). COLORADO - First report of season in Mack area, Mesa County; 8-10 per 100 sweeps in alfalfa. (Colo. Ins. Sur.). OKLAHOMA - Building up in alfalfa over western two-thirds of State; counts 15-150 per sweep, with honeydew appearing on heavier infested alfalfa. Damaging as far east as Okfuskee County; first serious infestations since 1956 reported in that area. (Okla. Coop. Sur.). KANSAS - About 10 per sweep on July 13 and 30 per sweep on July 18 at Ft. Hays Experiment Station, Ellis County. (Harvey). NEBRASKA - First of season collected in Howard County; counts 3 per 10 sweeps in single field. (Simpson). LOUISIANA - Present in alfalfa in Caddo and Bossier Parishes; no damage noted. (Spink).

PEA APHID (*Macrosiphum pisi*) - RHODE ISLAND - Very light on alfalfa in South Kingstown. (Hansen). UTAH - Generally low to moderate in Washington, Kane and Millard Counties; but causing moderate damage to second-crop alfalfa in Pleasant Valley of Duchesne County and parts of Uintah, Piute, Carbon and Wasatch Counties. (Knowlton). WYOMING - Averaged 15 per sweep in alfalfa in Goshen and Laramie Counties. (Fullerton). IDAHO - Infestations developing rapidly in Mountain Home, Grandview, Bruneau areas; but predators expected to contribute to a decline. (Gittins). Extremely abundant on 100 acres of alfalfa in Hammett area of Elmore County. Crop greatly retarded. (Edwards). Extremely abundant on some alfalfa in south central area; counts one-half cup per 5 sweeps in few fields. Parasitism and predators generally light. (Gittins). Populations in alfalfa in southwest heavy and increasing; weight of aphids on some alfalfa stems causing stems to bend. Numbers range up to one cup per sweep. Few predators and parasites present. (Scott). SOUTH DAKOTA - Populations considerably reduced in east central area; counts 8 per 10 sweeps in alfalfa. Predators numerous. (Mast). NEBRASKA - Low populations present; counts 10 per sweep. (Simpson). WISCONSIN - Counts in alfalfa not impressive. (Wis. Coop. Sur.). COLORADO - Populations high in alfalfa in Mesa, Montrose and Delta Counties; 4,000-12,000 per 100 sweeps. Reduced in Prowers, Bent, Otero, Crowley, Pueblo, Weld, Larimer and Adams Counties; 100-2,000

per 100 sweeps. (Colo. Ins. Sur.).

CLOVER APHID (Anuraphis bakeri) - IDAHO - Building up in red clover in Elmore County; presently below economic levels. (Gittins). Built up on red clover in Buhl and Castle Ford area, Twin Falls County; now apparently declining following considerable predator activity. (Manis, Roberts).

LYGUS BUGS (Lygus spp.) - IDAHO - Continued to be generally abundant in alfalfa throughout south central and southeastern areas; counts often exceed 5 per sweep. Populations expected to be above economic levels in alfalfa left for seed in these areas. (Gittins). WYOMING - Nymphs averaged 7 per sweep in alfalfa in Goshen and Laramie Counties. (Fullerton). UTAH - Adults and nymphs abundant in alfalfa seed fields in Millard and Kane Counties. (Knowlton). NEBRASKA - Counts in most alfalfa ranged 5-25 per 10 sweeps. (Simpson). COLORADO - Variable, 50-500 per 100 sweeps in Otero, Crowley, Prowers, Bent, Pueblo, Weld, Adams and Larimer County alfalfa. (Colo. Ins. Sur.). ARIZONA - Infestations continue very heavy in alfalfa statewide; counts 10-20 per 10 sweeps in northern area and 20-30 per 10 sweeps in southern area. (Ariz. Coop. Sur.). NEW MEXICO - Averaged over 150 adults and nymphs per 100 sweeps in alfalfa hay and seed fields in Dona Ana, Eddy and Chavez Counties. Controls being used with varying results. (N. M. Coop. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - WISCONSIN - Counts per 10 sweeps in alfalfa by counties were 20 in Eau Claire, 13 in Jackson, 11 in Monroe, 4 in Sauk, 3.7 in Dodge, 1.4 in Fond du Lac, 4.4 in Calumet and 3.5 in Manitowoc. Counts noticeably higher in western counties. (Wis. Coop. Sur.). ALABAMA - Causing considerable damage to white clover in Tallapoosa County. (Barwood). MARYLAND - Common in alfalfa and red clover in central area. (U. Md., Ent. Dept.). DELAWARE - Adult counts 0.1-1.7 per sweep in alfalfa; nymphs reduced. Adults present in soybeans. (Burbutis, Mason).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Counts per 10 sweeps in alfalfa by counties were 3.2 in Eau Claire, 1.2 in Monroe, 1 in Juneau, 2.6 in Sauk, 1.7 in Dodge, 1 in Fond du Lac, 4.2 in Calumet and 1 in Manitowoc. (Wis. Coop. Sur.). SOUTH DAKOTA - Averaged 4 per 10 sweeps in alfalfa in eastern area. (Mast).

A PLANT BUG (Adelphocoris sp.) - ARIZONA - Counts in Navajo and Apache County alfalfa averaged 4 per 10 sweeps. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Light locally on alfalfa in Robertson County. (Doering). ALABAMA - Causing considerable damage to white clover in Tallapoosa County. (Barwood). LOUISIANA - Averaged 72 per 100 sweeps in 2 soybean fields in East Baton Rouge Parish. (Spink).

A LEAF MINER - UTAH - Generally encountered, 1-4 percent of leaves infested, in alfalfa in Duchesne, Uintah and Carbon Counties; less common in Wasatch, Summit and Morgan Counties. (Knowlton).

POTATO LEAFHOPPER (Empoasca fabae) - KANSAS - Caused severe yellowing of field of alfalfa left for seed in Ellis County. (Harvey). MARYLAND - Injury evident in several alfalfa fields in central area. Nymphal populations increasing; up to 20 per sweep in Howard County. (U. Md., Ent. Dept.).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - UTAH - Common in alfalfa in north central area; sometimes numerous. (Knowlton). DELAWARE - Adults average 1 per sweep in alfalfa in Sussex County. (Burbutis, Mason).

ALFALFA WEEVIL (Hypera postica) - PENNSYLVANIA - Adult collected in Jefferson County and adults and larvae collected in Allegheny County during May; both new county records. Det. R. E. Warner and W. H. Anderson. (Newton). RHODE ISLAND - Averaged about 1 adult per 10 sweeps and about 5 larvae per 100 sweeps in alfalfa at South Kingstown, July 19. (Hansen). MONTANA - Caused considerable damage to

first-crop alfalfa and delayed second crop by heavy feeding in areas of Teton and Cascade Counties during period June 15-July 15. These spots on edge of previously infested area which now comprises practically all of State east of the Continental Divide. (Roemhild). WYOMING - Larvae averaged 3 per 25 sweeps in second-cutting alfalfa in Goshen and Laramie Counties. (Fullerton). UTAH - Caused extensive damage throughout Wayne County where early treatments omitted; larvae still doing some damage. (Knowlton).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - UTAH - Present, but not conspicuously damaging, in Daggett, Uintah, Duchesne and Wasatch Counties. (Knowlton).

BLISTER BEETLES (Epicauta spp.) - MISSOURI - Defoliating spots of alfalfa and soybeans in west central and northwest areas. Infestations in soybeans in south-east. (Munson, Thomas, Wood). OKLAHOMA - Epicauta sp. heavy in few peanut fields in Bryan County. (Okla. Coop. Sur.). DELAWARE - Causing light injury locally in corn and soybeans. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSOURI - Counts in soybeans per foot of row 0-4 southeast and 0-2 in northwest. (Munson, Thomas, Wood). LOUISIANA - Averaged 1 per 100 sweeps in soybeans in East Baton Rouge Parish. (Spink). MARYLAND - Caused moderate injury to soybean foliage in Worcester County. (U. Md., Ent. Dept.).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - This species and D. undecimpunctata howardi averaged 3 per 100 sweeps in soybeans in East Baton Rouge Parish. (Spink).

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Adults abundant on alfalfa at South Kingstown, July 14. (Hansen). VIRGINIA - Damage to soybeans and corn severe in many areas of State. (Rowell, July 16). INDIANA - More abundant in Newton County area than in past 2 years; feeding primarily on smartweed, some on soybeans. (Gould).

WEBWORMS - DELAWARE - Larvae of Loxostege similalis present in alfalfa in Kent County; first report of season. (Burbutis, Mason). ALABAMA - Moderate infestations in alfalfa in Lee County; probably L. commixtalis. (Guyton). MISSOURI - L. similalis damaging alfalfa in west central and northwest areas; also feeding on soybeans in northwest and southeast areas. Webworms feeding on corn in southwest area. (Munson, Thomas, Wood). NEW MEXICO - L. sticticalis moths very abundant in alfalfa and in weeds along fence rows throughout major part of State. (N. M. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - UTAH - Generally present but generally light; occasionally moderate. (Knowlton). WYOMING - Larvae averaged 4 per 25 sweeps in alfalfa in Goshen and Laramie Counties. (Fullerton).

CUTWORMS - GEORGIA - Light to heavy infestations in peanuts throughout peanut area. (Johnson). MONTANA - Agrotis orthogonia and Chorizagrotis auxiliaris damaged corn in Roosevelt County on June 30. (Roemhild). OREGON - Peridroma saucia damaged alfalfa locally in Benton County, July 17. (Every).

GREEN CLOVERWORM (Plathypena scabra) - MISSOURI - Counts in soybeans in southeast 0-2 per foot of row. (Munson, Thomas, Wood). MARYLAND - Light to moderate on alfalfa and red clover in Howard and Frederick Counties. (U. Md., Ent. Dept.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Approximately 2 percent of peanut terminals damaged in Love County and from 1-3 percent of terminals damaged in other fields checked in Bryan and Choctaw Counties. (Okla. Coop. Sur.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Reported in Crockett County for first time during June. (PPC, So. Reg.). MISSOURI - Damage to soybeans evident in infested fields within quarantined area. (PPC).



FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - OHIO - First larva under bands at Wooster, June 27; first moth emerged July 13; injury very light to July 15. (Cutright). Nearly all apples in large, abandoned orchard near Columbus showed multiple entries as of July 21. (Blair, Holdsworth). INDIANA - Hatch continues on apples in Orleans area, but at slower pace than previous week. (Marshall, July 19). Development in Vincennes area continues along pattern predicted in CEIR 10(30):678. Daily adult captures in area increased July 13-18; new larval entries readily found in lightly sprayed orchard July 14. Control now will aid materially in preventing third-brood entries last week of August and first week of September. (Hamilton, July 18). ILLINOIS - Hatch continues in Carbondale area, although peak probably passed in most orchards. Protection still needed where first generation not controlled. (Meyer, July 20). MISSOURI - Few fresh entries noted in untreated central area orchards, July 19; most growers appear to have very good control. (Wkly. Rpt. Fr. Gr.). MINNESOTA - Larvae entering fruit in La Crescent area, Houston County. (Minn. Ins. Rpt.). NEW MEXICO - Causing heavy fruit drop in untreated apple orchards and home garden trees in Albuquerque area, Bernalillo County. (N. M. Coop. Rpt.). UTAH - Flight heavy in Davis, Weber and northern Salt Lake Counties, July 10-11; flight low before and after this date. (Davis). Coming to light traps at Logan, July 19-20. (Knowlton). CALIFORNIA - Light in peach fruit in Martinez, Contra Costa County, and in apples in Bridgeville, Humboldt County. (Cal. Coop. Rpt.).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - WISCONSIN - Began emerging in Door County apples on weekend of July 16. (Wis. Coop. Sur.). ILLINOIS - Populations generally light in Carbondale area. (Meyer, July 20). INDIANA - Daily bait trap captures of this species and *Platynota flavedana* increased July 15 in Vincennes area. (Hamilton). OHIO - Second-brood injury not observed or reported to July 15. (Cutright). PENNSYLVANIA - Infesting up to 2 branches per 100 in several vineyards in Erie County. (Pepper).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - OREGON - Population appears much reduced from 1959. Only 9 specimens recovered in bait traps to July 22. Infestations restricted to few orchards bordering Willamette River in Polk and Marion Counties. (Larson). ARKANSAS - Infestations heavy in many orchards; causing peaches to stick together in poorly treated orchards. (Ark. Ins. Rpt.). MISSOURI - Central area still between broods. (Wkly. Rpt. Fr. Gr.). ILLINOIS - Activity generally light in Carbondale area. Although general population is light, some blocks still have potential for late damage on late varieties. (Meyer, July 20). INDIANA - Number of third-brood moths coming to bait traps increasing in Vincennes area; larval entries expected to increase July 19-23. (Hamilton, July 18).

FRUIT TREE LEAF ROLLER (*Archips argyrospila*) - WISCONSIN - Heavy emergence from apples occurred in Door County on July 16-17, inclusive. (Wis. Coop. Sur.).

APPLE APHID (*Aphis pomi*) - MICHIGAN - Colonies covering 2-3 terminal leaves noticeable in orchards at Ionia, Sodus, Monroe and East Lansing. (Hutson). WISCONSIN - Began building up to noticeable numbers on Door County apples by July 16. (Wis. Coop. Sur.).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Building up on new growth and wounds in apple orchards in Rio Arriba, Sandoval, Bernalillo and San Juan Counties. (N. M. Coop. Rpt.). UTAH - Causing spotted injury about the State. (Davis, Knowlton).

APPLE MAGGOT (*Rhagoletis pomonella*) - MINNESOTA - High numbers of adults emerging in southern and Twin City areas. Initial emergence was normal; however, first heavy emergence was delayed. (Minn. Ins. Rpt.). WISCONSIN - Adult emergence in Door County apples began July 12; populations still low as of July 22. (Wis. Coop. Sur.). OHIO - First adults taken from Japanese plum trees June 24, and in early apple trees June 29; first cage emergence June 27. Trap catches heavy July 9 and 12. (Cutright). MASSACHUSETTS - Continues to be number one problem for apple growers. (Crop Pest Cont. Mess.).

ORCHARD MITES - NEW MEXICO - Heavy infestations of *Tetranychus* spp. bronzing leaves in untreated orchards in Bernalillo, Sandoval, Rio Arriba, San Juan and Valencia Counties. (N. M. Coop. Rpt.). UTAH - *Tetranychus mcdanieli* damage to apple foliage severe in some Weber County orchards. (Davis). Unspecified species causing moderate damage to apple orchards in Millard, Kane and Davis Counties; occasional orchard shows conspicuous discoloration. (Knowlton). MONTANA - Unspecified species of spider mites heavy on apples in Whitehall area, Jefferson County, June 15-July 15. (Roemhild). WISCONSIN - *Panonychus ulmi* populations reached 20 mites per leaf on Door County apples by July 18. (Wis. Coop. Sur.). ILLINOIS - *P. ulmi* and *T. canadensis* continue to be a threat in Carbondale area. (Meyer, July 20). INDIANA - Spider mites bronzing apple foliage wherever lack of control permits in Orleans area. (Marshall, July 19). Mite populations vary extensively from orchard to orchard in Vincennes area, depending on controls. *P. ulmi* populations still require controls in certain locations; *T. telarius* building up in others. Latter species causing damage in few peach orchards. (Hamilton, July 18). MISSOURI - *P. ulmi* heavy on peaches in southeast; caused severe bronzing of leaves. Present hot weather very conducive to buildup. (Wkly. Rpt. Fr. Gr.). OHIO - *P. ulmi* slowly increasing; much less serious than in 1958 and 1959 (Cutright); failed to materialize in large untreated orchard in contrast to commercial orchards where controls were necessary (Blair, Holdsworth). DELAWARE - *P. ulmi* and *T. schoenei* on apple, statewide; generally under control except in 2-3 isolated orchards. (Kelsey).

PEACH TWIG BORER (*Anarsia lineatella*) - WASHINGTON - Damage to apricots light to moderate in Wenatchee and Yakima areas. (Anthon). UTAH - Damage general but light in Millard County. (Knowlton).

RED-HUMPED CATERPILLAR (*Schizura concinna*) - CALIFORNIA - Medium populations occurring on apricot in Chico, Butte County. (Cal. Coop. Rpt.).

PLUM CURCULIO (*Conotrachelus nenuphar*) - WISCONSIN - Pupating in Door County apples, July 16. (Wis. Coop. Sur.). ILLINOIS - Activity in Carbondale area generally light. (Meyer, July 20). OHIO - Injury very heavy on untreated or poorly treated apple trees. (Cutright).

SHOT-HOLE BORER (*Scolytus rugulosus*) - ALABAMA - Plentiful in peach trees in Lee County. (Guyton). UTAH - Severely damaging cherry trees in orchard at Provo. Also damaged some peach and cherry trees in Ogden area. (Knowlton).

A JUNE BEETLE (*Cotinis texana*) - NEW MEXICO - Heavy infestations attacking peaches and grapes in Las Cruces area, Dona Ana County. Controls giving excellent results (N. M. Coop. Rpt.).

CONSPERSE STINK BUG (*Euschistus conspersus*) - CALIFORNIA - Heavy populations migrating into peach orchards as boysenberries are pruned in Modesto area, Stanislaus County. (Cal. Coop. Rpt.).

PEAR-SLUG (*Caliroa cerasi*) - OREGON - Causing leaf drop on untreated cherry trees in Salem area. (Capizzi). UTAH - Caused slight injury to pear, apple and plum foliage in Davis and Box Elder Counties. (Knowlton).

PEACH SILVER MITE (*Aculus cornutus*) - WASHINGTON - Adults causing moderate damage to peaches and plums in Yakima and Wenatchee areas. (Anthon).

PLUM NURSERY MITE (*Aculus fockeui*) - WASHINGTON - Caused heavy damage to cherries in Wenatchee area, week ending July 15; adults causing moderate damage to peaches and plums in Yakima and Wenatchee areas, July 22. (Anthon).

\* Keifer, H. H., 1959. Bur. Ent., Cal. Dept. Agr., Occasional Paper No. 1, Eriophyid Studies No. 27, page 5, May 8.

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Widespread on pecan and other trees throughout eastern and southern areas. (Okla. Coop. Sur.). NEW MEXICO - Light infestations on pecans in Dona Ana and Eddy Counties. (N. M. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - MISSOURI - Common on walnuts in southwest area. (Munson, Thomas, Wood). ALABAMA - Infestations present in Lee County. (Guyton).

FILBERTWORM (Melissopus latiferreanus) - OREGON - Adults have been successfully collected in a blacklight trap in a Eugene area filbert orchard this season. (Jones).

A WALNUT HUSK FLY (Rhagoletis suavis) - MARYLAND - Adult emergence from traps near black walnut noted at Beltsville on July 13. (U. Md., Ent. Dept.).

AN ERIOPHYID MITE (Eriophyes caryae) - TEXAS - Medium to heavy local infestation noted on pecan foliage in Gregg and Lamar Counties. (Garner).

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - An apparent peak hatch occurring in Lawton-Coloma-Sodus area. (Hutson). MISSOURI - Few very small larvae found in grapes near St. James, Phelps County, July 16. (Wkly. Rpt. Fr. Gr.).

GRAPE ROOT BORER (Vitacea polistiformis) - MISSOURI - Heavy infestations have appeared in Steelville area, Crawford County, and have killed a good number of vines. Although an occasional mild outbreak has occurred in the Rosati area, this is the first occurrence in considerable time to cause such severe damage in the State. (Wkly. Rpt. Fr. Gr.).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Causing severe defoliation of wild grapes in certain areas of Forsyth County. (Wright).

MEALYBUGS - MISSOURI - Survey of a considerable number of vineyards in Rosati area revealed heavy infestations of an unspecified species. (Wkly. Rpt. Fr. Gr.). WASHINGTON - Pseudococcus maritimus unusually heavy on grapes in lower Yakima Valley. (Keene, July 15).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - Total of 33,207 trees on 354 properties in Hidalgo and Cameron Counties inspected during June, with negative results. (PPC, So. Reg.). MEXICO - Rather general infestation found in community of El Cerrito (approximately 2 miles southeast of Allende, Nuevo Leon). Only 1 heavily infested tree found. (PPC, Mex. Reg., June Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Three males trapped from June 20-28 in Tijuana, Baja California; all within 1.5 miles of International Border in the city, near markets. (PPC, Mex. Reg.).

Citrus Insect Situation in Florida - Mid-July - PURPLE SCALE (Lepidosaphes beckii) activity decreased somewhat; populations expected to remain low in all districts. Highest activity is in Ridge and Brooksville districts. FLORIDA RED SCALE (Chrysomphalus aonidium) activity decreased slightly; little change expected during next 2 weeks; highest activity is in upper east coast, Bartow and Ridge districts. Activity of CITRUS RED MITE (Panonychus citri) has been decreasing for past 2 weeks; will continue to drop sharply. Highest activity is in Orlando, upper east coast and Indian River districts. CITRUS RUST MITE (Phyllocoptura oleivora) activity decreased on leaves, but increased sharply on fruit; populations will remain high in July. Highest activity is in Bartow, west coast and Ridge districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

TRUCK CROP INSECTS

APHIDS - MASSACHUSETTS - Building up on potatoes. (Crop Pest Cont. Mess.).  
NEW YORK - Building up on late cauliflower crop in Erie County. (N. Y. Wkly. Rpt.).  
NEW JERSEY - Phorodon menthae taken on spearmint in Highland Park, June 27, 1960,  
by H. E. Wave. Det. by M. D. Leonard. A new State record. (Pepper). DELAWARE -  
Myzus persicae building up on potatoes and tomatoes in New Castle County and on  
peppers in Kent and Sussex Counties. Present on sweetpotatoes in Kent County.  
(Burbutis, Mason). WISCONSIN - Macrosiphum pisi counts in late peas low. Averages  
per 10 sweeps by counties were: Dodge 54, Fond du Lac 23.3, Calumet 15, Manitowoc  
115.5. Aphids increasing on potatoes in southeastern area and heavy in Dane  
County. (Wis. Coop. Sur.). WYOMING - M. persicae averaged 6 per sweep in potato  
fields examined in Goshen and Laramie Counties. (Fullerton). COLORADO - M. persicae  
high on potatoes in Milliken-Platteville area of Weld County, 100-500 per 100  
sweeps. (Colo. Ins. Sur.). UTAH - Brevicoryne brassicae damage light to moderate  
on cabbage in Salt Lake, Davis and Weber Counties. (Knowlton).

Potato Aphids in Maine - Infestations approximately tripled in Presque Isle area;  
about normal for time of year. Counts range 0.6 - 5.5 of all species, per plant.  
POTATO APHID (Macrosiphum solanifolii) predominates, generally followed by  
BUCKTHORN APHID (Aphis nasturtii). GREEN PEACH APHID (Myzus persicae) and FOXGLOVE  
APHID (M. solani) generally present but in very small numbers. (Shands).

POTATO LEAFHOPPER (Empoasca fabae) - VIRGINIA - Large populations developing on  
potatoes. (Rowell, July 16). DELAWARE - Adults and nymphs fairly common on  
potatoes in New Castle and Kent Counties. Common in beans in Kent and Sussex  
Counties; apparently building up. (Burbutis, Mason). PENNSYLVANIA - Slowly  
building up on potatoes in northwest area. (Adams). MICHIGAN - Adults range  
1-3 per sweep on potato fields at Stanton; nymphs beginning to appear. (Hutson).  
WISCONSIN - Relatively low on potatoes in most sections. (Wis. Coop. Sur.).  
NORTH DAKOTA - Slight increase in southeast counties. (N. D. Ins. Sur.). SOUTH  
DAKOTA - Average 1 per sweep on untreated potatoes in east central area.  
(Hantsbarger). COLORADO - Averaged 10-30 per 100 sweeps in Weld County potatoes.  
(Colo. Ins. Sur.).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Adults averaged 1 per 100  
sweeps in potato fields in Goshen and Laramie Counties. (Fullerton).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - COLORADO - Averaged 40 per 100  
sweeps on potatoes near Milliken in Weld County. (Colo. Ins. Sur.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Very light, spotted  
infestations of adults and large larvae in potato fields in Presque Isle area.  
(Shands). WISCONSIN - Moderate on potatoes in Sauk, Price, Waupaca, Winnebago  
and Dane Counties. (Wis. Coop. Sur.). UTAH - Generally light on potatoes in  
Weber and northern Davis Counties. Appeared in Brigham City; apparently the  
second known infestation for Box Elder County. (Knowlton, Allred). IDAHO -  
Spotted infestations on potatoes in many eastern areas. (Glittins).

FLEA BEETLES (Epitrix spp.) - COLORADO - E. tuberis averaged 10-20 per 100 sweeps  
in potatoes near Gilcrest in Weld County and 2-4 per 100 sweeps in Montrose County.  
(Colo. Ins. Sur.). WISCONSIN - E. cucumeris moderate on potatoes in Dane,  
Winnebago, Waupaca, Price, Iron, Eau Claire, Sauk and Chippewa Counties. (Wis.  
Coop. Sur.). DELAWARE - E. cucumeris adults reduced generally on potatoes;  
present on watermelon in Sussex County. (Burbutis, Mason).

WIREWORMS - MONTANA - Present and damaging potatoes in Deer Lodge County, June 15-  
July 15. (Roemhild).

POTATO TUBERWORM (Gnorimoschema operculella) - CALIFORNIA - Light larval infesta-  
tion of tomato fruit in San Onofre, San Diego County. (Cal. Coop. Rpt.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy and damaging tomatoes and beans in Oakdale-Patterson area, Stanislaus County. (Cal. Coop. Rpt.).

HORNWORMS (Protoparce spp.) - COLORADO - Egg count reduced and larval count now 0.83 per 100 tomato leaves in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). CALIFORNIA - Medium in tomato plantings in Los Alamos, Santa Barbara County. (Cal. Coop. Rpt.).

A LEAF MINER (Liriomyza sp., near commelinae) - SOUTH CAROLINA - Caused serious injury to tomatoes in coastal area during June. (Cuthbert, Reid).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Adults still active in Bridgeton area on July 14. (Ins.-Dis. Newsl.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Rather heavy in some untreated sections. (Rowell, July 16). DELAWARE - Adults causing light feeding injury to beans in New Castle County. (Burbutis, Mason). MARYLAND - Severe on beans in home gardens over State. (U. Md., Ent. Dept.). COLORADO - Eggs hatching on beans in Montrose County; numbers light to moderate. Egg masses in Weld County average 1-5 per 10 plants. (Colo. Ins. Sur.). WYOMING - Larvae averaged 3 per 100 plants in beans in Goshen and Laramie Counties. (Fullerton). UTAH - Damage common in home gardens in Salt Lake, Davis, Weber and Cache Counties. (Knowlton). NEW MEXICO - Larvae and adults moderate to heavy and damaging beans in Torrance County. (N. M. Coop. Rpt.).

IMPORTED CABBAGEWORM (Pieris rapae) - VIRGINIA - Very numerous in crucifers. (Rowell, July 16). MARYLAND - Moderate to severe on cabbage in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). MICHIGAN - First instar on cauliflower transplants. (Hutson). UTAH - Damage light to moderate on cabbage in Salt Lake, Davis and Weber Counties. Conspicuous at Wellington, Carbon County. (Knowlton).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Populations apparently became more general than in preceding recent years in tomatoes in Charleston County during June and early July. (Day, Reid). MARYLAND - Larvae infesting broccoli and cabbage locally in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). NEW YORK - Building up on late cauliflower crop in Erie County. (N. Y. Wkly. Rpt.). MICHIGAN - Eggs hard to find on cauliflower at South Haven and Sodus. Adults common in light traps at Sodus and Holland. (Hutson).

DIAMONDBACK MOTH (Plutella maculipennis) - MONTANA - Very abundant in mustard fields in central area, June 15-July 15. (Roemhild).

CROSS-STRIPED CABBAGEWORM (Evergestis rimosalis) - MARYLAND - Moderate on broccoli locally in St. Marys County. (U. Md., Ent. Dept.).

AN INTRODUCED FLEA BEETLE (Phyllotreta cruciferae) - WISCONSIN - Collected from cabbage in Walworth County during mid-May; a new State record. (Wis. Coop. Sur.). DELAWARE - Adults common on horseradish in Kent County; causing noticeable feeding injury. (Burbutis, Mason).

FLEA BEETLES (Phyllotreta spp.) - MARYLAND - Abundant and destructive to broccoli and cabbage in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.).

CABBAGE MAGGOT (Hylemya brassicae) - MICHIGAN - First heavy infestation of season in radishes at Sodus. (Hutson).

SQUASH BUG (Anasa tristis) - MISSOURI - Troublesome on squash and pumpkins in central area. (Wkly. Rpt. Fr. Gr.). INDIANA - More abundant than in past three seasons in Tippecanoe County. (Gould). MARYLAND - Eggs and nymphs appearing on squash in St. Marys County. (U. Md., Ent. Dept.).

HORNED SQUASH BUG (Anasa armigera) - INDIANA - Common on cucumbers in experimental plots in Tippecanoe County. (Gould).

CUCUMBER BEETLES - COLORADO - Acalymma vittata averaged 0-5 per 10 cantaloup plants in Bent, Otero and Pueblo Counties. (Colo. Ins. Sur.). LOUISIANA - Diabrotica balteata averaged 6 per 100 sweeps in sweetpotatoes in St. Landry Parish. (Spink). MARYLAND - A. vittata heavy on cucumbers and cantaloup in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.).

BEEB WEBWORM (Loxostege sticticalis) - NEW MEXICO - Almost completely defoliated about 30 acres of sugar beets near Willard, Torrance County. Adults very abundant in alfalfa and weeds along fence rows throughout major part of State. (N. M. Coop. Rpt.). WYOMING - Larvae averaged 2 per 100 plants in sugar beets in Goshen and Laramie Counties. (Fullerton). NORTH DAKOTA - Scattered infestations ranged light to severe in sugar beets in Red River Valley. (N. D. Ins. Sur.). MINNESOTA - Light hatch in northwest district; many adults present in beet fields. (Minn. Ins. Rpt., July 15).

BEEB LEAFHOPPER (Circulifer tenellus) - UTAH - Curly top disease more severe than anticipated in Kanab and Orderville areas of Kane County. Transmitted curly top in tomatoes averaged 3 percent in northern area. Early tomatoes in southern area (protected by orchards) with about 15 percent curly top. One experimental tomato field at Santa Clara 75-80 percent infested with curly top. (Dorst, Knowlton). COLORADO - Averaged 15-25 per 100 sweeps; curly top incidence ranged 5-10 percent in Mesa County. (Colo. Ins. Sur.).

SUGAR-BEEB ROOT MAGGOT (Tetanops myopaeformis) - IDAHO - Heavy on 550 acres of sugar beets in Rising River area of Bingham County. Every beet examined contained 1 or more maggots. An estimated three-ton-per-acre reduction in yield expected. (Gittins).

TORTOISE BEETLES - DELAWARE - Metriona bicolor and Agroiconota bivittata adults and larvae prevalent on sweetpotatoes in Kent County, causing moderately heavy feeding injury. (Burbutis, Mason). LOUISIANA - Cassida sp. ranged 2-12 and averaged 6 per 100 sweeps in sweetpotatoes in St. Landry Parish. (Spink).

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) - LOUISIANA - Ranged 80-220 and averaged 121 per 100 sweeps in sweetpotatoes in St. Landry Parish. (Spink).

ONION MAGGOT (Hylemya antiqua) - UTAH - Injury below normal in northern area. (Knowlton).

ONION THRIPS (Thrips tabaci) - COLORADO - Averaged 5-20 per onion plant in Prowers, Bent, Otero, Crowley, Pueblo, Adams and Weld Counties. (Colo. Ins. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - DELAWARE - Larvae present on carrots in New Castle County. (Burbutis, Mason).

CELERYWORM (Papilio polyxenes asterius) - DELAWARE - Larvae present in carrots in New Castle County; adults common, with continued egg laying on foliage. (Burbutis, Mason).

BLISTER BEETLES - OKLAHOMA - Several species causing heavy damage to gardens in some counties in the east central, southeast and south central areas. (Okla. Coop. Sur.). IDAHO - Infesting 14 acres of sugar beets in American Falls area; severe injury spotted throughout field. (Portman).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Troublesome in Kane and Millard Counties. (Knowlton).

RASPBERRY ROOT BORER (Bembecia marginata) - WASHINGTON - Damaged raspberry crowns at Pasco, Franklin County. (TelFord, July 15).

GREEN JUNE BEETLE (Cotinis nitida) - NORTH CAROLINA - Adults feeding heavily on fruit of wild blackberries in some areas of Forsyth County. (Wright).

GRASSHOPPERS - DELAWARE - Nymphs common on carrots, in New Castle County. (Burbutis, Mason). UTAH - Damaging raspberry patches in some foothill areas of Salt Lake, Utah and Davis Counties. (Knowlton). CALIFORNIA - Schistocerca shoshone heavy on asparagus in El Centro, Imperial County. (Cal. Coop. Rpt.).

#### TOBACCO INSECTS

TOBACCO BUDWORMS (Heliothis spp.) - VIRGINIA - Light to moderate in tobacco in Pittsylvania County. (Rowell, July 16). GEORGIA - Moderate on tobacco in Mitchell, Thomas, Atkinson, Ware, Pierce, Tattnall, Candler, Bulloch and Jenkins Counties. (Johnson). MARYLAND - More than the usual number of parasitized budworms on tobacco in southern area. (U. Md., Ent. Dept.).

HORNWORMS (Protoparce spp.) - GEORGIA - Moderate on tobacco in Tattnall, Candler, Bulloch and Jenkins Counties. (Johnson). MARYLAND - More than the usual number of parasitized hornworms found on tobacco in southern area. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Light to moderate on tobacco in Mitchell, Thomas, Atkinson, Ware, Pierce, Tattnall, Candler, Bulloch and Jenkins Counties. (Johnson). MARYLAND - Continually increasing in St. Marys and Calvert Counties. Injury to the choice middle leaves common on more advanced tobacco. (U. Md., Ent. Dept.).

APHIDS - NORTH CAROLINA - Infesting tobacco locally in Nash County. (Peebles, Farrier). MARYLAND - Myzus persicae heavy on tobacco in several locations in St. Marys County. Controls underway. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Damage serious in fields where overwintering population high and where early treatments not followed. (Cott. News Lett.). SOUTH CAROLINA - First generation at peak emergence. Percent punctured squares doubled in some instances. (Cott. Lett., July 18). GEORGIA - Square counts made in 88 fields in central and southern areas, with percent punctured squares ranging 0-70, averaging 21. (Johnson). ALABAMA - Infestations increasing most areas; slight increase occurred in northern area. Counts from 543 fields reveal that farmers keeping populations under control. Infestations in some untreated fields in central area range as high as 80-90 percent; generally 8-12 percent in northern area. "Hatch-out" expected next week in northern area; apparently occurred during week in north central area. (Grimes). TENNESSEE - Dry weather caused high mortality of first-generation weevils in western area. Counts in southern counties in area ranged 0-43 percent punctured squares; controls very effective. Presently between generations. (Locke). MISSISSIPPI - Second-generation emergence has increased local infestations in some fields in delta counties. Average infestations remain generally low; less than 2 percent. (Merkl et al.). LOUISIANA - Average infestation 8 percent in Tallulah area. (Smith et al.). ARKANSAS - First-generation emergence past peak; second generation emerging in early planted cotton. Second-generation peak expected by August 1. More fields infested than in 1959; generally percent punctured squares higher. Little activity at present, however. (Ark. Ins. Sur.). MISSOURI - Of 577 fields scouted, 15 infested, with percent punctured squares 0-17. (Munson, Thomas, Wood). OKLAHOMA - Populations continue to rise in cotton-producing areas along Arkansas River in east central, along Red River in south central and southeast, and throughout southwest. Counts ranged up to 38 percent punctured squares in some areas but

most counts much lower. (Okla. Coop. Sur.) TEXAS - Infestations increased generally in McLennan and Falls Counties. Infestation averaged 34.7 percent punctured squares in 27 treated fields and 53.3 percent in 21 untreated fields; overall average 39.1 percent. (Parenacia, Cowan, Davis).

BOLLWORMS (Heliothis spp., et al.) - NORTH CAROLINA - Increasing in many fields. (Cott. News Lett.). SOUTH CAROLINA - In many areas, rapidly increasing damage causing more concern than any other cotton pest. Potential damage appears greater than in any previous year. (Cott. Lett., July 18). Increasing populations noted in Florence area during past 2 weeks effectively controlled. (Taft, Hopkins, Jernigan). GEORGIA - Egg counts made in 88 fields in central and southern areas, with average of 33 per 100 terminals noted; larval counts averaged 5 per 100 terminals. (Johnson). ALABAMA - Infestations lower, generally, than for past several weeks. Few fields in northern area with 2-3 larvae per 100 terminals. (Grimes). TENNESSEE - Continue low over western area; very light damage to squares noted. (Locke). MISSISSIPPI - Moth activity increased in delta counties and egg deposition increasing; hatch should occur during week ending August 5. (Merkel et al.). LOUISIANA - Average square infestation 2 percent and number of eggs and larvae per 100 terminals averaged 3.30 and 1.94, respectively, in Tallulah area. (Smith et al.). ARKANSAS - Third-generation moths emerging; egg and larval counts increased. Beneficials giving excellent control. (Ark. Ins. Sur.). MISSOURI - Eggs 0-7 and larvae 0-3 per 100 terminals in 43 infested fields of 577 scouted. (Munson, Thomas, Wood). OKLAHOMA - Localized infestations becoming slightly more common over State. Highest counts (up to 25 percent) noted in south central area. (Okla. Coop. Sur.). TEXAS - Injurious infestations continue to occur in most succulent cotton in McLennan and Falls Counties. Square injury averaged 5.1 percent in treated fields and 10.4 percent in untreated fields. Boll injury averaged 5.8 percent in treated and 11.9 percent in untreated fields. Moth collections heavy. (Parenacia, Cowan, Davis). NEW MEXICO - Heavy infestations of young larvae in terminals and blooms in areas of Eddy County; light to moderate and spotty infestations in areas of Dona Ana and Chaves Counties. (N. M. Coop. Rpt.). ARIZONA - Infestations remain very low in cotton, generally. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Light infestations on cotton in Hughson area, Stanislaus County, and in Le Grand, Merced County. (Cal. Coop. Rpt.). NEW MEXICO - Generally light to medium in cotton in Dona Ana, Luna and Chaves Counties. (N. M. Coop. Rpt.). ALABAMA - Causing light to moderate defoliation of cotton in isolated areas of southwest; spotted infestations in Monroe County. (Arant). Adults plentiful in pastures and woods surrounding cotton in Lauderdale County. (Grimes). GEORGIA - Light to moderate infestations in central and southern areas. (Johnson).

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - In regulated area of east Mexico, infestations appear generally light. In west Mexico in states of Baja California, Sonora and Sinaloa, inspections were negative. (PPC, Mex. Reg., June Rpt.). ARIZONA - Cumulative acreage treated through fifth insecticide application amounted to 156,828 acres. Sixth application started on June 29. Bloom inspections in Maricopa and Yuma Counties negative. As of June 30, 136 light traps in operation as follows: Maricopa County, 37; Pima, 26; Pinal, 23; Santa Cruz, 4; and Yuma, 46. Only 1 moth trapped during June (near Cashion in Maricopa County). (PPC, West. Reg., June Rpt.).

BEEET ARMYWORM (Spodoptera exigua) - ARIZONA - Medium infestations in some cotton in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

AN ANTHICID - ARIZONA - Populations of an unidentified species averaged 20 per 10 net sweeps on cotton in Bullhead City area of Mohave County. (Ariz. Coop. Sur.).

COTTON SQUARE BORER (Strymon melinus) - TENNESSEE - Small numbers found over western area in cotton; some very light damage to squares noted. (Locke).



COTTON LEAFWORM (Alabama argillacea) - ARKANSAS - Found in Desha County, July 15. (Black).

BEET WEBWORM (Loxostege sticticalis) - NEW MEXICO - Heavy infestation moving from Russianthistle into adjacent cotton in Dona Ana County; skeletonized leaves on field margins before controls applied. (N. M. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations continue troublesome in all cotton-growing areas; counts per 100 sweeps 20-40 in central and southwest areas and 12-25 in southeast. (Ariz. Coop. Sur.). NEW MEXICO - Light to moderate in Dona Ana and Luna Counties; most infestations adjacent to newly cut alfalfa. (N. M. Coop. Rpt.). MISSISSIPPI - L. lineolaris very light in delta counties; little damage now evident. (Merkl et al.).

FLEAHOPPERS - MISSOURI - Of 577 fields scouted, 446 infested, with 0-18 per 100 terminals. (Munson, Thomas, Wood). OKLAHOMA - Psallus seriatus continued to cause concern in south central and southwest areas; counts range 0-150 per 100 terminals, average 10-15. (Okla. Coop. Sur.).

SPIDER MITES - NORTH CAROLINA - Abundant in cotton in some areas. (Cott. News Lett.). SOUTH CAROLINA - Building up in some instances. (Cott. Lett., July 18). GEORGIA - Light to moderate infestations in central and southern areas. (Johnson). ALABAMA - Infestations increasing to some extent in central and northern areas. Infestations spotted and treatments applied in several Tennessee Valley counties. (Grimes). TENNESSEE - Infestations increasing slowly in western area. Predators effective. (Locke). MISSISSIPPI - Localized spot infestations common in delta counties. (Merkl et al.). ARKANSAS - Populations increasing; spot treatments being applied. (Ark. Ins. Sur.).

APHIDS - NORTH CAROLINA - Abundant in cotton in some areas. (Cott. News Lett.). SOUTH CAROLINA - Building up in some instances. (Cott. Lett., July 18). GEORGIA - Light to heavy infestations of Aphis gossypii on cotton throughout central and southern areas. (Johnson). OKLAHOMA - A. gossypii building up locally in southern half of State. (Okla. Coop. Sur.).

A THRIPS (Frankliniella sp.) - OKLAHOMA - Light to heavy infestations noted in few fields of cotton in south central area. Very little damage reported in other areas. (Okla. Coop. Sur.).

BLISTER BEETLES - MISSISSIPPI - Causing concern in local fields of skip row cotton in delta counties. When weeds and grass are disked or chopped out, beetles move into cotton and defoliate plants in spots. (Merkl et al.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BUDWORMS (Choristoneura spp.) - MINNESOTA - C. pinus 33 percent emerged in central St. Louis County. C. fumiferana mostly in peak flight in south central Cook County. (Minn. Ins. Rpt.). WISCONSIN - Defoliation by C. pinus ranged from apparently none to severe over northwest jack pine belt; most severe in southern Douglas and northwestern Washburn Counties. Moth emergence well along in Polk County and just beginning in Bayfield County. Pupal parasitism high in Polk County; various parasites active at several locations. Mating common in Washburn and southern Douglas Counties, July 14. Some mortality may occur in over-mature and suppressed trees in most severely defoliated stands; approximately 1,000 acres showed light defoliation in Marinette County July 11-15, where larvae still predominant. (Wis. Coop. Sur.).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MICHIGAN - Eggs 60-70 percent hatched at Mesick; hatching practically complete at Bath and East Lansing. (Hutson).

BARK BEETLES - IDAHO - About 80 percent of drainages containing Douglas-fir stands on west and east sides of Salmon River, Nezperce National Forest, have from one to several groups of trees with "red tops", caused by Dendroctonus pseudotsugae; average number of trees per group usually 5. Heavy broods of Scolytus ventralis present during June in small groups of grand fir scattered along Route 3 northeast of St. Maries. Groups of up to 20 young ponderosa pines have turned red from feeding of Ips spp. in Granite Creek, Kanisku National Forest. (Tuncock). ALABAMA - Ips grandicollis, I. calligraphus, I. avulsus and Dendroctonus terebrans plentiful around sawmills and in cut over timber in Lee County. (Guyton).

WHITE-PINE WEEVIL (Pissodes strobi) - MINNESOTA - Continues feeding on white pine terminals; sparsely distributed in Carlton, St. Louis, Lake and Pine Counties. (Minn. Ins. Rpt.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - MONTANA - Very abundant in many spots during period June 15-July 15, especially in southern and central areas. Severely attacked Douglas-fir seedlings in forest nursery at Missoula. (Roemhild). COLORADO - Migrated from galls in Larimer County. (Colo. Ins. Sur.).

APHIDS - IDAHO - Cinara sp. widespread and prevalent on needles of grand and white fir in Nezperce National Forest. (Tuncock). Moderate numbers of undetermined species appearing on a considerable variety of native vegetation in nonagricultural areas in southernmost counties; particularly common on native wild legumes and various species of willows. (Gittins). MONTANA - Cinara sp. severely attacked spruce trees in Roosevelt County during period June 15-July 15. (Roemhild).

BALSAM GALL MIDGE (Dasyneura balsamicola) - WISCONSIN - Larvae heavily infesting approximately 30 acres of balsam fir in a Langlade County stand, July 14. (Wis. Coop. Sur.).

PINE SAWFLIES - MINNESOTA - First-instar Neodiprion lecontei on open-growing jack pine in St. Louis, Carlton, Pine, Cass and Aitkin Counties. First-generation Diprion similis largely in third to fifth instars and cocooned in Carlton, St. Louis, Pine and Aitkin Counties; no second-generation emergence noted; some treatment for first generation reported in Lake Hubert area, Crow Wing County. (Minn. Ins. Rpt.). WISCONSIN - Small red pine plantation in Wood County lightly infested with N. lecontei on July 12. D. similis light in a red pine plantation in Dunn County. (Wis. Coop. Sur.).

YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) - MINNESOTA - Continues to require local control on ornamental plantings in Cook, Lake, St. Louis and Carlton Counties. (Minn. Ins. Rpt.). WISCONSIN - Larvae feeding on white spruce in Oconto County; defoliation light, July 8. (Wis. Coop. Sur.).

LARCH SAWFLY (Pristiphora erichsonii) - MINNESOTA - Mainly in second and third instars in Lake and St. Louis Counties. (Minn. Ins. Rpt.). WISCONSIN - Approximately 30 percent defoliation occurred in a 200-acre larch stand in Marinette County, July 11-15. (Wis. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Becoming more abundant on poplar and mulberry throughout southern half of State. (N. M. Coop. Rpt.). ARKANSAS - Infestations continue more general than for past 3 years. (Ark. Ins. Rpt.). ALABAMA - Infesting persimmon trees in Lauderdale County; some smaller trees completely defoliated. (Grimes). NEW YORK - First of season noted in Suffolk County. (N. Y. Wkly. Rpt.).

FALL CANKERWORM (Alsophila pometaria) - MONTANA - Defoliated deciduous trees in McCone County, June 15-July 15. (Roemhild).

OAK LEAF MINERS (*Cameraria* spp.) - NEW JERSEY - Damage by *C. cincinnatiella* and *C. hamadryadella* much less serious than during 1959. (Ins.-Dis. Newsl., July 19).

PUSS CATERPILLAR (*Megalopyge opercularis*) - OKLAHOMA - Infestations on shade trees causing concern in localized areas of Love County. (Okla. Coop. Sur.).

A SAGE DEFOLIATOR (*Oidaematophorus grisescens*) - MONTANA - Severe defoliation of sage, by what was probably this species and an unidentified gelechiid, occurred in Bridger area, June 15-July 15. (Roemhild).

Forest Foliage Defoliation Survey - Connecticut - Approximately 20,500 acres of forest land observed because of defoliation; of about 15,000 nontreated GYPSY MOTH (*Porthetria dispar*) infested acres, 9,900 were more than 50 percent defoliated, and of another 5,500 acres, 1,200 were 50 percent or more defoliated by either a CANKERWORM (undetermined) or FOREST TENT CATERPILLAR (*Malacosoma disstria*), with some locations in complex with an OAK LEAF TIER; 20,000 acres treated for GYPSY MOTH were not defoliated. (Johnson, Cooper).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - IDAHO - Injury common to severe on untreated elms in Twin Falls area. (Gittins). UTAH - Damaging in Ogden area; population extremely high on some damaged trees. Damaging additional trees in Salt Lake City-Holladay area. (Knowlton). ARIZONA - Very heavy populations defoliating elms in St. Johns area, Apache County, and in Phoenix area, Maricopa County. (Ariz. Coop. Sur.). KANSAS - Larvae averaged 4-5 per leaf in Cowley County. Second generation causing extensive defoliation. (Thompson). OKLAHOMA - Moderate to severe throughout eastern two-thirds of State; extensive defoliation of elms common. Presently one of most commonly reported pests in State. (Okla. Coop. Sur.). ARKANSAS - Infestations quite common; new generation developing. (Ark. Ins. Rpt.). ALABAMA - Present in Lee County area; generally, infestations have not been as severe as normally throughout State. (Guyton).

A LEAF BEETLE (*Anomoea laticlavata*) - GEORGIA - Caused heavy defoliation of oak in Albany, Dougherty County. (Glover, June 16).

COTTONWOOD BORER (*Plectrodera scalator*) - KANSAS - Adults emerged in very large numbers in Barton County; counts 10 per Lombardy poplar. Adults chewing away leaves and bark from small twigs. Many Lombardy poplars "broke over" during winter. (Thompson).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - WISCONSIN - Second seasonal adult emergence underway; considerable numbers entering bark of trees dead or dying of Dutch elm disease. Through July 20, a total of 2,508 trees diagnosed as diseased. (Wis. Coop. Sur.).

TWIG PRUNER (*Elaphidion villosum*) - RHODE ISLAND - Caused much twig drop of oak in Warwick, Providence and East Greenwich. (Hansen).

TEN-LINED JUNE BEETLE (*Polyphylla decemlineata*) - MONTANA - Damaged trees north of Big Belt Mountains during period June 15-July 15. (Roemhild).

WALKINGSTICK (*Diaperomera femorata*) - WISCONSIN - Nymphs present in moderate numbers in 2 Marinette County oak areas, July 8. (Wis. Coop. Sur.).

ELM LEAF APHID (*Myzocallis ulmifolii*) - MONTANA - Populations generally down, but spotted infestations occurred statewide, June 15-July 15. (Roemhild).

A LEAFHOPPER (*Empoasca bipunctata*) - CALIFORNIA - Medium on *Ulmus parvifolia* in Hemet, Riverside County. (Cal. Coop. Rpt.).

A CICADA (*Okanagana rimosa*) - MONTANA - Very abundant in the area just east of the Continental Divide during period June 15-July 15. (Roemhild).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Excessively heavy defoliation of some evergreens continues in isolated areas; larvae now full grown in Stillwater area. (Okla. Coop. Sur.). ARKANSAS - Continues numerous over State. (Ark. Ins. Rpt.). MARYLAND - Heavy on arborvitae in Frederick and on juniper in St. Marys Counties. (U. Md., Ent. Dept.).

MIMOSA WEBWORM (Homadaula albizziae) - NEW JERSEY - Damage appearing in southern and central areas. (Ins.-Dis. Newsl., July 19). FLORIDA - Collected by E. W. Holder from mimosa at Macclenny, Baker County, July 19; a new county record. (Fla. Coop. Sur.). ALABAMA - Damage to mimosa trees evident in Morgan County. (Grimes). ARKANSAS - Infestations present in some areas. (Ark. Ins. Rpt.). MARYLAND - Severe on mimosa and honeylocust at many localities in southern sections. (U. Md., Ent. Dept.).

A GELECHIID (Fascista cercerisella) - DELAWARE - Larvae feeding heavily between webbed leaves of redbud trees in Newark area, New Castle County. A possible new State record. (Bray).

A LEAF MINER (Tischeria omissa) - CALIFORNIA - Heavy on hibiscus in Paradise, Butte County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Causing widespread damage to various ornamentals throughout State; damage appears heaviest on roses. (Rowell, July 16). MARYLAND - Adults have been heavy on ornamentals in suburban areas; now definitely decreasing. (U. Md., Ent. Dept.).

BOXELDER APHID (Periphyllus negundinis) - MONTANA - Infestations spotted throughout southern portion of State, June 15-July 15. (Roemhild).

A LILY APHID (Macrosiphum scoliopi) - CALIFORNIA - Light population on lily in Smith River, Del Norte County. (Cal. Coop. Rpt.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MONTANA - Heavy on some ornamental spruce in Great Falls, Cascade County, during period June 15-July 15. (Roemhild).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - MISSOURI - Very heavy on lilac bushes in northwest area; several bushes killed. (Munson, Thomas, Wood).

A SCALE INSECT (Kuwanaspis hikosani) - SOUTH CAROLINA - Collected by Prof. F. W. Thode in mid-February 1960, from bamboo in gardens at Aiken, that once contained many valuable and probably imported shrubs and plants. Det. by Harold Morrison. The species has not previously been reported as being established in the United States. (Nettles, McAlister).

ROSE-SLUG (Endelomyia aethiops) - MONTANA - Infested roses in Gallatin and Phillips Counties, June 15-July 15. (Roemhild).

SPIDER MITES - OKLAHOMA - Damaged shrubs and ornamentals over wide section of State. (Okla. Coop. Sur.). SOUTH DAKOTA - Increasing on ornamentals. (Hantsbarger). NORTH DAKOTA - Moderate to severe on spruce and juniper at numerous locations in southern half of State. (N. D. Ins. Sur.). MARYLAND - Injurious to evergreens at several localities over State. (U. Md., Ent. Dept.).

#### INSECTS AFFECTING MAN AND ANIMALS

HOUSE FLY (Musca domestica) - OKLAHOMA - Populations increased in Stillwater area. (Okla. Coop. Sur.). INDIANA - Building up in Lafayette area. (Dobson). NORTH CAROLINA - Increasing in Forsyth County during past few weeks. (Wright).

FACE FLY (Musca autumnalis) - MARYLAND - Adults ranged 8-20 per dairy animal at 2 localities in Howard County. Heavy numbers on horses at Brunswick, Frederick County; new county record. (U. Md., Ent. Dept.). PENNSYLVANIA - Up to 35 on an animal in Erie County. Milk reported lowered and heavy weeping occurred. (Adams). INDIANA - Counts on cattle at Upland, Grant County, ranged 20-30 per head. (Dobson). ILLINOIS - Expected to increase until fall. (Ill. Ins. Rpt.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations in Payne County are up; counts 12-14 per cow. Causing concern in Murray County. (Okla. Coop. Sur.).

HORN FLY (Siphona irritans) - ALABAMA - Continues to increase throughout State; heavy on cattle in Madison and Limestone Counties. (Grimes). MISSOURI - Very heavy on beef cattle in northwest area. (Munson, Thomas, Wood). OKLAHOMA - Populations on range cattle increased in Payne County area, where counts per animal averaged 1,500 on cows and 3,000 on bulls. Counts per animal on range cows averaged 400-700 in panhandle area. Causing concern throughout most of eastern half of State. (Okla. Coop. Sur.). NEBRASKA - Lower populations in central, southern and southeastern areas. Counts ranged 0-75 per animal. (Simpson). UTAH - Annoying to livestock throughout Millard, Kane and Iron Counties. Infestations building up in many localities; populations 300-2,500 per animal in parts of Duchesne and Carbon Counties. (Knowlton).

TABANIDS - UTAH - Silvius pollinosus found in Cisco area of Grand County, May 24. Det. by A. Stone. (Knowlton). OKLAHOMA - Tabanus spp. causing general concern in eastern half of State. Heaviest infestations noted in several years in Craig County. Counts in Pushmataha County averaged 6-12 per animal. (Okla. Coop. Sur.). ALABAMA - Tabanus americanus, T. atratus and T. fulvulus in moderate numbers in Lee County. (Hays). MINNESOTA - Horse flies and deer flies very numerous in northern wooded areas; annoyed both humans and cattle. (Minn. Ins. Rpt., July 15). WISCONSIN - Deer flies troublesome in several sections of State. (Wis. Coop. Sur.).

MOSQUITOES - UTAH - Unspecified species very annoying at Logan, Cache County; numerous and biting severely at Mirror Lake, Summit County. (Knowlton). MINNESOTA - A total catch of 29,439 female adult mosquitoes made by light traps operated during July 10-16 in Hennepin, Anoka, Ramsey and Washington Counties. About 85 percent of total catch was Aedes vexans. Of 498 larval collections made, 277 contained A. vexans and 50, Culex tarsalis. (Minn. Ins. Rpt.). WISCONSIN - Counties reporting heavy populations of mosquitoes were Dane, Bayfield, Chippewa, Forest, Florence, Monroe, Oconto, Sauk, Sawyer, Washburn, Waupaca and Waushara. In some light traps, counts were as high as 600-900. Populations declining in some northern sections. (Wis. Coop. Sur.). DELAWARE - Mosquitoes collected from a single, red artificial resting box at Bombay Hook Refuge, Kent County (July 13, 18-21) were Anopheles quadrimaculatus 147, Anopheles (complex of several spp.) 3 and Culiseta melanura 3. (Burbutis, Mason).

A BLACK FLY (Simulium canonicolum) - OREGON - Reported in CEIR 10(27):602 as Simulium sp., has been identified as above species by A. Stone. (Every).

BLACK FLIES - IDAHO - Numerous species common along water courses in Owyhee, Twin Falls and Cassia Counties. Adult populations not abundant. (Gittins).

FLIES - UTAH - Numerous at Kanab and in many rural communities in State. Often abundant about pig pens, corrals and chicken coops. (Knowlton).

CERATOPOGONIDS - UTAH - Annoying to humans and sheep in an area between Price and Wellington in Carbon County. (Knowlton).

A SARCOPHAGID (Wolfahrtia opaca) - UTAH - Kit mink infested by larvae on some Weber County mink farms. (Knowlton).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy on cattle and in wooded areas in southeastern area. Most reports from Atoka, Pushmataha and McCurtain Counties. (Okla. Coop. Sur.).

BLACK-LEGGED TICK (*Ixodes scapularis*)<sup>\*</sup> - MINNESOTA - Found again in north central section. This is the fifth time that the species has been found in the area and appears to have become established. Hitherto, usually found in the South. (Minn. Ins. Rpt.).

BEDBUG (*Cimex lectularius*) - NORTH CAROLINA - Over 1 infestation per week reported in Forsyth County. (Wright).

CHIGGER (*Eutrombicula alfreddugesi*) - OKLAHOMA - Continued to cause concern to vacationers in many parts of the State. (Okla. Coop. Sur.).

FLEAS - ALABAMA - Undetermined species causing considerable concern in homes in Lee County. A number of inquiries made. (Barwood).

WHEEL BUG (*Arius cristatus*) - MARYLAND - Several children bitten at a camp in Kent County. (U. Md., Ent. Dept.).

#### BENEFICIAL INSECTS

LADY BEETLES - WISCONSIN - *Chilocorus stigma* adults numerous in Polk County jack pine heavily infested with black pine leaf scale; pupae concentrated on lower branches and twigs, less numerous on upper parts of trees. Adult emergence began July 14. (Wis. Coop. Sur.). SOUTH DAKOTA - *Hippodamia* spp. very abundant in alfalfa where there was a heavy population of pea aphid; averaged 130 larvae and 11 adults per 10 sweeps in some fields. (Mast). WYOMING - *Hippodamia* spp. adults averaged 8 and larvae 4 per 25 sweeps in alfalfa in Goshen and Laramie Counties; adults averaged 5 per 25 sweeps in potatoes. (Fullerton). COLORADO - *Hippodamia* sp. dominant; ranged 100-500 per 100 sweeps on alfalfa in Prowers, Bent, Otero, Crowley, Pueblo, Adams, Weld and Larimer Counties. (Colo. Ins. Sur.). OKLAHOMA - Light to medium populations of *H. convergens* common in most crops over State; occasionally heavy in few isolated fields. (Okla. Coop. Sur.). NORTH CAROLINA - Larvae of an unspecified species numerous in peanuts in Perquimans County. (Thompson, Farrier).

MELYRIDS (*Collops* spp.) - WYOMING - Averaged 10 adults per 25 sweeps of alfalfa in Goshen and Laramie Counties. (Fullerton). IDAHO - *C. hirtellus* considerably abundant on a timothy planting in Latah County. (Manis).

NABIDS (*Nabis* spp.) - UTAH - Generally present in alfalfa in northern section. (Knowlton). COLORADO - *N. ferus* ranged 10-30 per 100 sweeps of alfalfa in Adams and Weld Counties. (Colo. Ins. Sur.). WYOMING - Adults averaged 7 per 25 sweeps in alfalfa in Goshen and Laramie Counties. (Fullerton). SOUTH DAKOTA - Averaged 3 per 10 sweeps in alfalfa in eastern section. (Mast). OKLAHOMA - Light numbers (0.2-0.7 per sweep) common in alfalfa surveyed in panhandle and northwest areas. (Okla. Coop. Sur.). NEBRASKA - Populations increasing. (Simpson).

LACEWINGS (*Chrysopa* spp.) - SOUTH DAKOTA - Small numbers of larvae and adults in nearly all forage crops in eastern section. (Mast). WYOMING - Larvae averaged 3 per 25 sweeps in alfalfa in Goshen and Laramie Counties. (Fullerton). UTAH - Numerous in alfalfa in Vernal-Maeser area, Uintah County. (Knowlton). COLORADO - *C. coloradensis* ranged 10-20 per 100 sweeps in alfalfa in Weld and Adams Counties. (Colo. Ins. Sur.). OKLAHOMA - Up to 0.3 per sweep in alfalfa and grain sorghum fields in panhandle and northwest areas. (Okla. Coop. Sur.).

FLOWER BUGS (*Orius* spp.) - WYOMING - Adults averaged 6 per 25 sweeps in potatoes in Goshen and Laramie Counties. (Fullerton). NEBRASKA - Populations increasing, especially on corn. (Simpson).

\* Cooley, R. A. and Kohls, G. M., 1945. Natl. Inst. Health Bul. 184:13. (U. S. Pub. Health Serv.).

HONEY BEE (*Apis mellifera*) - CALIFORNIA - During inspections the first half of the year, 2,447 colonies found diseased with American foulbrood; disease incidence (2.8 percent) is 1 percent below that of 1959. American foulbrood being found in 1 of every 5 apiaries inspected. (Cal. Coop. Rpt.).

ALKALI BEE (*Nomia melanderi*) - IDAHO - Peak adult emergence reached in southwest; heavy emergence just beginning in south central and southeastern sections and not expected to reach peak until last of July. (Manis, Roberts). UTAH - Appearing in Pleasant Valley of Vernal and Duchesne areas of Uintah Basin. (Knowlton).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (*Popillia japonica*) - Inspection of airports and surrounding area throughout northern New England revealed little infestation. All reports negative except at Lebanon Municipal Airport, NEW HAMPSHIRE, where infestation light and persisted for several years. Not considered hazardous. Controls applied to plane loading and parking sections and to borderland growth. Fairly heavy beetle emergence noted in Concord and Keene, New Hampshire; and Essex Junction and Burlington, VERMONT. In CONNECTICUT, heavy populations present at airports at Trumbull (private) and New London (municipal). Populations at other airports in State light or medium. Population at Otis AFB, Sandwich, MASSACHUSETTS, heavy; infestations negative, light or medium at other airfields. Heavy infestation present at commercial field at Hillsboro, RHODE ISLAND, and medium at Navy field at Quonset. All airports, where adults found, treated. No substantial change in population levels in NEW YORK as of July 19. In New York City section, a slight decline noted at airports. A slight increase noted in up-State areas, where emergence was later than usual. As of July 25, situation unchanged, with foliar treatments being applied at commercial airports to prevent development of hazardous populations. Populations increased at Stewart AFB, Newburgh, New York, despite treatments. Arrangements made for aerosol treatment prior to takeoff of all planes destined beyond regulated area. General infestation continues throughout NEW JERSEY, with heavy buildup in localized areas of Atlantic, Burlington, Mercer, Camden, Union, Bergen, Gloucester and Cumberland Counties. Maximum regulatory measures being carried out at McGuire AFB, Teterboro Airport and Pomona Airport. Buildup controlled at Newark Airport. (PPC).

In PENNSYLVANIA, populations still heavy in North Philadelphia-Norristown area but seemingly slightly lighter at Philadelphia National Airport where all possible measures are being carried out. Infestation elsewhere in State continues spotty, with heavy populations continuing at Williamsport and Conellsville and new heavy infestations reported at Erie Airport and in vicinity of State College. Treatments being applied regularly at all airports from which planes leave regulated area and adult populations justify controls. At Dover AFB, DELAWARE, few beetles present. Hazardous conditions at New Castle County Airport subsiding somewhat, but control operations continue and aerosoling of planes still required. It is believed adult flight will be mostly over at Friendship Airport, MARYLAND, during next week; only a few beetles flying around loading planes. Heavy mortality indicated. Operation procedures remain the same, however, as hazardous conditions still exist. Population has reduced greatly at Andrews AFB; controls discontinued. Hazardous conditions exist at Hagerstown and Frederick Airports in western Maryland; regulatory measures taken. Heavy flight buildup reported at Easton Airport; controls put into operation and hazard has been eliminated. A medium to heavy hazard declared at West Ocean City Airport, with treatments initiated. Heavy flights also reported at Wicomico Airport, Salisbury; hazardous condition exists. Controls initiated and reports indicate hazard subsided to great extent. Emergence believed at peak in VIRGINIA, with exception of Norfolk and Princess Anne Counties, where they are on decline. At National Airport, Washington, D.C., few beetles were observed; airport not declared as hazardous. In western Virginia, beetles light to medium, with some heavy browning on favorite hosts. This is first season damage noted on host plants, such as sycamore. In Washington and

Smyth Counties, populations moderately severe to severe. All airports in State considered nonhazardous because of treatments. Believed at peak in lower elevations of WEST VIRGINIA; probably be at peak in remaining mountainous portions next week. Beetles widespread in upper portion of State, with heavy feeding noted in Charlestown (Jefferson County) and Elizabeth (Wirt County); feeding light to medium in remainder. In lower regulated portion of State, feeding generally light to medium; however, beetles are more abundant and widespread in Kanawha, Summers and Monroe Counties than in any previous season. All airports under constant observation and being treated where beetles are present. (PPC).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - In Metropolitan New York, single adults found outside Kings County at 2 locations, on Staten Island at Naval Reserve Station and at Miller Air Field on east shore. In upstate area, adults collected or observed beyond limits of previously known infestation at isolated areas of Buffalo, Niagara Falls, Lockport, Southport and Elmira. Some spread also noted inside regulated area around periphery of known infestation in counties of Monroe, Wayne, Ontario and Onondaga. WEST VIRGINIA - Blacklight trap collections negative during June. PENNSYLVANIA - Larval and adult surveys negative. (PPC, East. Reg., June Rpt.).

ASIATIC GARDEN BEETLE (Autoserica castanea) - RHODE ISLAND - Flying to lights in South Kingstown and Narragansett, July 15. (Hansen). FLORIDA - Intercepted in cabin of plane at Miami Airport, Dade County, July 11. No previous records of interception. (Fla. Coop. Sur.).

A SCARABAEID (Aphodius hamatus) - OREGON - Collected in large numbers at Burns, Harney County, July 19. Larvae known to damage pastures at high altitudes. (Ritcher).

A JAPANESE WEEVIL (Calomycterus setarius) - MARYLAND - Adults entering a home at a Washington County locality; a new county record. (U. Md., Ent. Dept.).

CALIFORNIA TORTOISE-SHELL (Nymphalis californica) - IDAHO - Large flights observed in many parts of State during early and mid-July. One flight in Moscow Mountain area, traveling in westerly direction, estimated at 1,000 adults per minute passing a checkpoint. (Verner, Manis, Scott, Gittins).

A PSYCHID (Apterona crenulella) - CALIFORNIA - Heavy populations on Cytisus scoparius in Nevada City, Nevada County. (Cal. Coop. Rpt.). UTAH - Extremely numerous at Hyrum, Cache County. (Knowlton).

STALK BORER (Papaipema nebris) - OHIO - Report of damage to various plants received from many scattered locations over State. (Holdsworth).

GERMAN COCKROACH (Blattella germanica) - NEBRASKA - Large numbers of calls and complaints indicate heavier than normal populations in Lincoln area. (Simpson).

TEXAS LEAF-CUTTING ANT (Atta texana) - TEXAS - Swarms of kings and queens noted in Carrizzo Springs, Dimmit County, after recent rains. (Carson).

MILLIPEDES - RHODE ISLAND - Heavy invasions of unspecified species in basements and garages in Newport area. (Hansen, Peabody).

SATIN MOTH (Stilpnotia salicis) - CALIFORNIA - Single male collected at light in Alturas, Modoc County, week of July 11, by F. J. Charrier; det by W. R. Bauer. Subsequent detections showed moths present in Alturas, New Pine Creek, Davis Creek and Canby, Modoc County; and in Tulelake area, Modoc and Siskiyou Counties. These are first records for the State. (Cal. Coop. Rpt.).



CORRECTIONS

CEIR 10(28):627 - PINE SAWFLIES (Neodiprion spp.) - WISCONSIN - Note on Swaine jack-pine sawfly should read: "N. swainei was ovipositing heavily on June 23 even though first ovipositing was recorded on June 7 in the same Columbia County planting. Eggs now swelling....."

CEIR 10(28):632 - A PSYCHID (Apterona crenulella)- CALIFORNIA - Last line should read: "This is second record for this county; first record, Georgetown, September 4, 1952."

ADDITIONAL NOTES

NEW YORK - EUROPEAN RED MITE (Panonychus ulmi) rather general, requiring control in many Clinton County orchards. Building up in a few orchards in Niagara County. CODLING MOTH (Carpocapsa pomonella) showing a few fresh entries in Clinton County, July 21. APPLE MAGGOT (Rhagoletis pomonella) adults increasing in orchards in Clinton and Orleans Counties. APPLE APHID (Aphis pomi) quite troublesome in many Niagara County orchards and very numerous in Monroe County orchards. EUROPEAN CORN BORER (Pyrausta nubilalis) flight continues in Ithaca area, with a diminishing trend. Still abundant in stalks of untreated early corn in Hudson Valley. CORN EARWORM (Heliothis zea) adults laying eggs in Hudson Valley area. Early corn infested in Eden Valley in western area. (N. Y. Wkly. Rpt.)

PENNSYLVANIA - EUROPEAN CORN BORER quite heavy in the southeast area and in Indiana County. Moderate to heavy in the northwest. (Udine, Menusan, Adams).

VERMONT - GRASSHOPPERS, mostly Melanoplus femur-rubrum and M. differentialis, building up. First POTATO LEAFHOPPER (Empoasca fabae) burn on alfalfa noted. APPLE MAGGOT emergence continues and damage to elms by ELM LEAF BEETLE (Galerucella xanthomelaena) prevalent throughout State. FACE FLY (Musca autumnalis) populations reported decreasing in Rutland and Addison Counties. (MacCollom).

MAINE - GRASSHOPPERS moderate in blueberry fields, causing light damage to ripening berries. (Boulanger). Heavy populations of YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) attacking ornamental spruce in south Orland area, with moderate damage, on July 6; and FALL WEBWORM (Hyphantria cunea) attacking hardwoods in Kennebec County on July 11, with nests becoming conspicuous. ELM LEAF BEETLE heavy and causing severe injury to elms in Kennebec, Cumberland and York Counties on July 18. (Nash).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quing.	Heliothis zea	vires.
<u>ALABAMA</u>								
Auburn 7/19,22	6					10	87	19
<u>ARKANSAS</u>								
Hope 7/14-20	8	1					11	
*Morrilton 7/14-20	35	12					80	
Kelso 7/14-20	13	7		1			52	
Fayetteville 7/14-20	14	1					43	
<u>FLORIDA</u>								
Gainesville 7/12,20							19	1
Quincy 7/5,11					21		1	44
<u>ILLINOIS</u>								
Urbana 7/15-21	816	39		93	35			
<u>INDIANA (Counties)</u>								
Lawrence 7/12-18	136	6	2	7	57	37	2	
Tippecanoe 7/15-21	321	20	2	28	9	3		
Vanderburg 7/13-19	140	3	7	2	4		6	
<u>KANSAS</u>								
Garden City 7/12-17	20	8		20	1	6	5	
Hays 7/7,14,16	140	9		55			10	
Manhattan 7/14-20	143	34		28			2	
Mound Valley 7/16	10	2			4	1		
Wathena 7/11-13, 15-17	212	39		46	1	2		
<u>LOUISIANA</u>								
Baton Rouge 7/15-21	44	2	125	1			37	
Tallulah 7/16-22	6		61				47	32
<u>MISSISSIPPI</u>								
*Stoneville 7/8-14	28	17	95	2	8		12	
*Stoneville 7/15-21	62	9	249		29		73	7
<u>MISSOURI</u>								
Sikeston 7/16-21	22	11		3			18	
Columbia 7/17-22	68	18	11	3				
<u>NEBRASKA</u>								
Kearney 7/6-19	1,076	442	5	539		5	6	9
Lincoln 7/8-21	3,576	181		842		3	6	
North Platte 7/7-19	569	182	2	427		7	2	
<u>NEW JERSEY</u>								
Sutton 7/14,18	38	5	6		16	1	6	
Traino 7/14,18	31	5	16		3		4	
<u>SOUTH CAROLINA</u>								
Clemson 7/9-22	39	15	521	8	41	15	21	2
Charleston 7/18-24	9	2	111		12		43	8

\*Two traps - Morrilton; 2 traps - Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quinq.	Heliothis zea	vires.
<b>TENNESSEE (County)</b>								
Blount 7/12-18	14	12	100	7	2	10	10	
<b>TEXAS</b>								
Waco 7/16-22	273	6	204	64			2,810	47
<b>WISCONSIN</b>								
Platteville 7/13-15	116	16		1				
Waterford 7/12-18	12							
Middleton 7/12-18	31	15						
Arlington 7/12-18	64	4		6		1		
*Theresa 7/12-18	11							
Oakfield 7/12-18	32					3		
Fairwater 7/12-18	32							
Rosendale 7/12-18	4							
N. Fond du Lac 7/15-18	2							
Ripon 7/12-18	2					1		
La Crosse 7/12-18	255							
Green Bay 7/12-18	4	7						

\* Three traps - Theresa.

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HAWAIIAN INSECT NOTES

BEAN THRIPS (Hercotrips fasciatus) was reported by F. A. Bianchi as seriously damaging a long row of grand crinum (Crinum asiaticum) at Pahala, island of Hawaii, during week of June 13. All stages of thrips found in abundance and feeding resulted at first in large brownish areas of discoloration, and later in wilting of the leaves, sometimes ending in death of weaker plants. This is the first record of C. asiaticum as a host plant of H. fasciatus. A new ENCYRTID parasite of RHODES-GRASS SCALE (Antonina graminis) was found at various localities on Oahu by J. W. Beardsley. The species belongs to a genus close to Anagyrus, but is considerably smaller than A. antoninae, the only primary parasite of Antonina previously known to occur in Hawaii. Females of the new parasite have very much reduced, nonfunctional wings, whereas the males are macropterous. It develops as a multiple internal parasite, as many as 9 or 10 wasps having emerged from one Antonina specimen. Specimens submitted to Dr. B. D. Burks and Mr. P. H. Timberlake for determination. The species also apparently occurs on Wake Island, as dead specimens were found among lots of A. graminis collected in November 1959 by E. J. Ford, Jr. on that island. Mr. Beardsley also reported the rearing of specimens of a CECIDOMYIID MIDGE (Arthrocnodax walkeriana), determined by D. E. Hardy, from small palm fruits infested with undetermined MITES which were held in the laboratory. This species has been in our literature as a predator of various mealybugs (see Hardy, Insects of Hawaii 10:281, 1960), but this evidence indicates that it may also prey on mites. A LAWN ARMYWORM (Spodoptera mauritia acronyctoides) was observed by J. Einmo on Midway Island in June. He reported a serious outbreak which covered an area of more than 2 acres. A PARASITE (Telenomus nawai) is being collected to be sent to Midway to aid in control of S. mauritia acronyctoides. (Hawaiian Entomological Society, July 11, 1960, meeting).

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported April 30 by the Plant Quarantine Division, ARS, USDA, are as follows:

KHAPRA BEETLE (Trogoderma granarium) 16 times (including 12 in stores); at Seattle, Washington, one time; at San Pedro, California, 2 times; at Houston, Texas, 8 times (including one in an importation of used burlap and 3 in old burlap covers of crude rubber importations); at Port Arthur, Texas, 2 times; at Tampa, Florida one time; at Wilmington, Delaware, one time; and at Baltimore, Maryland, one time.

DURRA STALK BORER (Sesamia cretica (Led.)) in cornstalk cargo from Italy on March 3 at Baltimore.

PEACH FRUIT MOTH (Carposina niponensis Wlsm.) in dried plums in mail from Hong Kong at Detroit, Michigan, on January 21.

A FRUIT FLY (Dacus sp.) twice at Honolulu, Hawaii, once in redpepper pods in baggage from Japan on December 19 and once in airplane stores from Fiji on October 20; also once at Seattle in baggage from the Philippines on December 31.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in baggage from Mexico at Brownsville, Texas, on January 30.

MEXICAN FRUIT FLY (Anastrepha ludens) in airplane stores from Mexico at Miami, Florida; 3 times in baggage at Brownsville for either Florida or California destinations; and 3 times at Nogales, Arizona, for California destinations.

ASIATIC RICE BORER (Chilo suppressalis (Wlk.)) 2 times at Honolulu in baggage destined for the mainland from Korea on February 3.

A WEEVIL (Apion sp., probably carduorum Kby.) (a weevil of economic importance on globe artichokes in the Mediterranean region) on artichoke plants for planting purposes in baggage from Italy at New York, New York, on February 29.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 10 times; at Honolulu 6 times in baggage destined for the mainland; at San Pedro 2 times in baggage; at Wilmington one time in stores; at New York one time in baggage; and probably one time in airplane stores at Boston, Massachusetts.

WHITE GARDEN SNAIL (Theba pisana (Muller)) 8 times; at Houston 2 times from Spain with a used automobile and contaminating a ship's hold; at Charleston, South Carolina, 3 times with military cargo from the Mediterranean; and at New York 3 times, including 2 times with miscellaneous cargo from Morocco and one mixed with edible snails, Helix aspersa, in baggage from Italy.

A TERMITE (Heterotermes convexinotatus (Snyder)) (a neotropical termite very destructive to buildings and crops) with a cargo of Zamia sp. plants from Vera Cruz, Mexico, on January 11 at Brownsville.

A PYRAUSTID (Sylepta elevata (F.)) ( a pest of sweetpotatoes ) in stores from Trinidad on February 13 at Mobile, Alabama.

STATUS OF SOME IMPORTANT INSECTS IN THE UNITED STATES

APPLE AND THORN SKELETONIZER (Anthophila pariana (Clerck))

**Economic Importance:** This insect is of European origin and a minor pest of apples in its native habitat. It first appeared in the United States in Westchester County, New York, in 1917. By 1920, it had spread into nearby Connecticut and during 1921-22 caused apparent injury to untreated apple trees in that State. Larvae skeletonize leaves in a manner similar to cankerworms. In the United States, the insect is now only an occasional pest in local areas where it occurs and is evidently easily controlled.

**Distribution:** Canada, Czechoslovakia, England, France, Germany, Japan, Netherlands, Norway, Poland, Sweden, Switzerland, Turkey, USSR and the United States (see map).

**Hosts:** Apple seems to be the preferred host. Also recorded on pear, plum, fig, sweet cherry, mountain ash, birch, willow and hawthorn (Crataegus spp.).

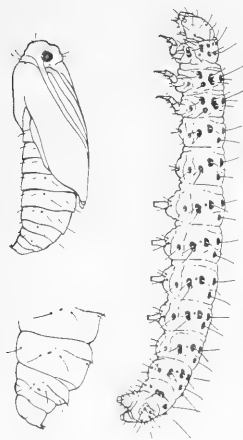
**Life History and Habits:** The biology as recorded in Connecticut is as follows: Three and possibly 4 generations appear annually; overwintering probably occurs as a pupa. Eggs are laid singly on surfaces of leaves and on leaf stalks, beginning as early as April 25. Hatching occurs in about 7 days and young larvae feed on undersurface of leaves. There are 4 instars. When larvae are about one-third grown, usually second instar, they move to the upper leaf surface, spin a light web, often curling the leaf, and feed beneath the web. Feeding consumes all except the opposite epidermis and veins. Several larvae of various sizes may often be found under a single web, especially when abundant. In many cases, a partially skeletonized leaf will be deserted for a fresh one nearby. Very early infestations are easily recognized by the irregular, scattered,

DISTRIBUTION OF APPLE AND THORN SKELETONIZER (Anthophila pariana)



brownish, spots on the upper surface of the leaves. When disturbed, the larva wriggles vigorously and drops on a fine silken thread. Larval feeding lasts 3 or 4 weeks, after which a cocoon is formed in 48 hours and pupation takes place. After 12 days, the pupa wriggles out one end of the cocoon and the adult emerges. Adults are active in daytime, especially on warm days. They have an erratic manner of flight, not long sustained, and a characteristic posture when at rest, wings held partly upraised.

**Description:** ADULTS - Color variable, predominantly dark reddish-brown, often with purplish tinge. Marginal scales of wings nearly always dark brown. Forewing often with an indefinite pale band and wavy black lines; and frequently with 3-4 white spots along costal margin. Hind wing with pale stripe on costal margin extending from base of wing slightly beyond middle. Labial palpi with 3 segments; third or terminal segment three-fourths length of middle one. Wing below mostly grayish. Body clothed with brown scales except on sides of abdomen which are gray-tipped. Body 4.5-5 mm. long; wing expanse 11-13 mm. EGG - Subhemispherical; 0.41 mm. long, 0.38 mm. wide and 0.23 mm. high; soft; thin shelled; finely sculptured, with fine lines radiating from center point on rounded surface. Pale green when first laid; turning yellowish. LARVA - First Instar: About 0.8 mm. long, body distinctly annular; head, pale yellowish-brown, posterior margin with dark line; thoracic legs and prolegs a translucent, pale, watery green. Second Instar: Pale yellowish-green with dark tubercles; about 3.5 mm. long; head light yellowish-brown. Third Instar: Similar to second instar with dark tubercles becoming larger; 6-7 mm. long. Fourth Instar: 10-12 mm. long; yellowish-green with prominent black tubercles; head pale brown; posterior lateral edge, ocelli and a narrow line at edge of mouth parts, black. PUPA - Averages 5.4 mm. long; blunt at ends; light yellowish-brown when newly formed; darkening later. Segment 10 has 2 short dorsal spines. COCOON: White, about 19 mm. long and rather narrow; inner cocoon spindle pointed at ends; outer cocoon stretched between opposite sides of fold of leaf with smaller amount of silk woven next to leaf itself. Both cocoons formed of double layer of silk. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies and the U.S. National Museum). CEIR 10(31): 7-29-60



Adult



Figures of Anthophila pariana

Pupa and Larva

Damage

Figures: Larva and pupa from Porter, B. A. and Garman, P. 1923. Conn. Agr. Expt. Sta. (New Haven) Bul. 246, pp. 247-264. Damage from Felt, E. P. 1918. Cornell Ext. Bul. 27, pp. 143-147. Adult - USDA Photograph.

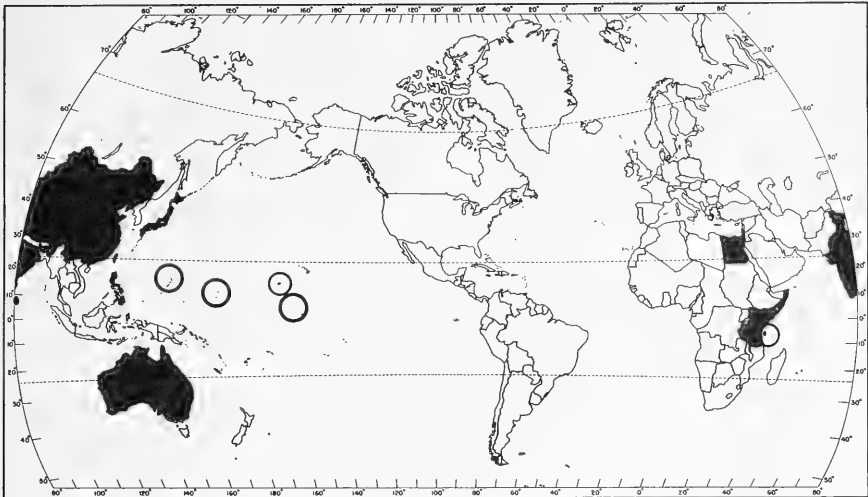
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

EGYPTIAN FLUTED SCALE (*Icerya aegyptiaca* (Dougl.))

**Economic Importance:** This margarodid scale was described in 1890 from specimens causing great damage to shade trees in Alexandria, Egypt. The pest occurs in many parts of Micronesia and thrives on many plants. Breadfruit is one of the favored hosts in that area. The insect is common, and sometimes abundant, in Formosa. Avocado and citrus are attacked in some areas, while in others it is not regarded as important on these hosts. Coccinellids in the genus *Rodolia*, particularly *R. premila*, are effective in controlling the pest. *I. aegyptiaca* has been intercepted occasionally at U. S. ports of entry.

**Distribution:** Australia, Ceylon, China, Egypt, Formosa, India, Israel, Japan, Kenya, Micronesia, Philippines, Somaliland, Tanganyika, Tahiti, Wake Island, Zanzibar.

**Hosts:** Recorded from over 100 hosts. More important species include citrus, coffee, croton, palm, fig, castorbean, rose, tea, mulberry, guava.



General Distribution of *Icerya aegyptiaca*

**Life History and Habits:** A detailed life history of *I. aegyptiaca* is apparently not available. Observations in Egypt indicate that the females deposit from 150 to 200 eggs. Young nymphs are very active, becoming less active as they mature. This species is capable of building up to large populations which cause considerable injury to host plants. There appears to be several generations a year.

Description: ADULT female orange-red or brick-red, broad oval, slightly convex above. Dorsum usually covered with white waxy substance which is easily rubbed off. Margin has series of stout waxy filaments curved at tip, very brittle and easily knocked off. Posterior filaments conceal ovisac. The species characterized by the presence of a complete fringe of stout, irregularly sinuate, tapering white processes of powdery wax which gives insect a starlike or fluted appearance. Denuded body of insect 5-7 mm. long by 3-4 mm. broad. Body cuticle covered with large number of hairs of various sizes, those in the marginal region of the abdomen larger in size and forming small groups. A few long setae also in the anal region. (A detailed technical description of this species will be found in a paper on oriental iceryne scale insects by Rao. 1/



Adult female of Icerya aegyptiaca

1/ Rao, V. P. 1950. Indian Jour. Ent. 12(1):39-66. Figure (except map) also from this publication.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPER infestation in Box Elder County, Utah, spread to estimated 100,000 acres; populations high in cropland areas of New Mexico and heavy in some areas of Oklahoma. (p. 731). EUROPEAN CORN BORER quite heavy on more advanced corn in southeast South Dakota. FALL ARMYWORM outbreak severe in southern Louisiana. (p. 732). CORN LEAF APHID damaging several hundred acres of late barley in Utah and heavy on same crop in Minnesota; building up on tassels of early planted field corn in Wisconsin and increasing in Illinois. A CHINCH BUG severe on St. Augustine grass in Alabama and Louisiana. (p. 733). CORN ROOTWORMS damaging in several states. (pp. 733,734). PEA APHID damaging second-crop alfalfa in areas of Utah and counts high in Colorado. (p. 734). CUTWORMS damaging in several states. (p. 735).

ORCHARD MITES on increase in several areas. (p. 736).

LEAFHOPPERS on potatoes increased in areas of the Dakotas and in Colorado. (p. 737). HORNWORMS damaging tomatoes in Indiana and tomatoes and chili peppers in New Mexico. (p. 738). SPIDER MITES causing severe injury to strawberry plantings in 2 Maryland counties and general in mint-growing areas of Jefferson County, Oregon. (p. 739).

BOLL WEEVIL and BOLLWORM activity increasing in several cotton-growing states; BEET ARMYWORM requiring control in area of Pima County and continues a problem in areas of Pinal County, Arizona. (p. 740).

BARK BEETLES damaging in areas of California. (p. 741).

FACE FLY populations increased in Orono area, Maine, and continue serious in northern and western areas of Virginia. (pp. 746, 747). MOSQUITOES remain annoying in some areas. (p. 744).

Adult JAPANESE BEETLE flights decreased in some areas, but remain hazardous in others. (pp. 745,746).

ADDITIONAL NOTES. (pp. 746, 747).

INSECT DETECTION: Mexican bean beetle found in home gardens in Jerome County, Idaho. (p. 738). A tabanid (Apatolestes comastes willistoni) was reported for first time from Utah. (p. 743). Face fly reported for first time from North Carolina (p. 744); first county records included Wapello, Keokuk, Washington, Jefferson, Henry and Guthrie Counties, Iowa. (p. 743). New county records included elm leaf beetle in Cowley County, Kansas (p. 742); and a Japanese weevil (Calomycterus setarius) in Lawrence County, Indiana. (p. 746).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 750).

Status of some IMPORTANT INSECTS in the United States. (p. 751).

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Reports in this issue are for the week ending July 29 unless otherwise indicated.

WEATHER OF THE WEEK ENDING AUGUST 1

Continued hot and generally dry weather from the Pacific Coast to the western Great Plains, hot and humid conditions in the Southern States, copious rainfall in most sections of the Atlantic Coastal States, and very cool temperatures on Saturday and the weekend in many north central and northeastern States highlighted this week's weather pattern. Weekly mean temperatures ranged from 3° to 6° above normal from inland sections of the Pacific States to the eastern slopes of the Rockies and the western Great Plains, continuing the persistent heat which has dominated most of this region so far this year. Readings of 100° or more were felt in most lower elevations of the Rocky Mountain and Plateau States, and wide areas of the western Great Plains on one or more days. New alltime records for high temperatures were set at Salt Lake City, Utah, with 107° on the 26th and San Angelo, Texas, with 111° on the 29th. The 110° at Laredo, Texas, on the 30th equaled the alltime high there.

Precipitation was generally light or absent from the Pacific States eastward to western portions of the Great Plains and into the upper Mississippi Valley. Widely scattered showers and thunderstorms over the Plateau and Rockies and portions of the northern Plains late in the week left moderate precipitation totals in extremely local areas, however. A large mound of cool dry polar air pushed southeastward from the northern Plains late in the week, dropping minimum temperatures to near-record levels and weekly averages generally below normal in the Middle West. The coolest area, with respect to normal, was over the east central Great Plains where -3° to -6° averages were general. Precipitation totals for the week from the eastern Great Plains to the Appalachians were light to moderate, with scattered showers and thunderstorms depositing amounts up to 2 inches or more in widely scattered areas of the upper Great Lakes, central Great Plains and lower Mississippi Valley. Over much of the latter region and the Tennessee and lower Ohio Valleys only very light scattered showers were recorded and more rain is needed.

Tropical storm Brenda developed on Thursday in an area of low pressure which had been in evidence for several days in the eastern Gulf of Mexico and began moving northeastward. By Friday morning the storm was centered over southeastern Georgia, and after a short passage off the coast of Georgia, the storm center passed inland over the upper South Carolina coast. Moving briskly through the eastern Carolinas and the Middle Atlantic States, it was centered at noon on Saturday just north of New York City and in northern Maine at midnight. Sustained winds associated with Brenda ranged up to 40 to 55 m.p.h., with gusts in squalls up to 65 m.p.h., from Florida to southern New England. Tides were around 4 to 5 feet above normal along the central west coast of Florida, and 5 to 7 feet above mean low water in Rhode Island. Very heavy local rainfall was recorded along Brenda's path in Florida, and in the coastal sections northward to southern New England. Amounts of more than 4 inches were general from Georgia to southern Maryland and in New Jersey and Connecticut. An alltime record, 11.27 inches, was measured at Tampa, Florida, in 24 hours on the 28th and 29th and 4 to 5-inch totals in 2 days were frequent in west central Florida. The 4.79-inch total in 24 hours at the Battery in New York City was the heaviest like amount there in July, exceeding 3.80 inches measured on July 26, 1872. Reported wind damage was light and while it is too early to evaluate the effect of the heavy rain on crops, benefits in most areas provided for late crops should far outweigh damage.

Showers earlier in the week in Florida left some locally heavy totals, including 5.65 inches in 1 hour and 7.95 inches in 2 hours on the 25th at Orlando. (Summary supplied by U.S. Weather Bureau).

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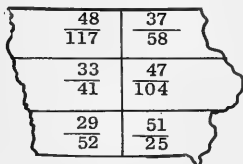
See page 749 for Weather Bureau 30-day outlook.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - CALIFORNIA - One of heaviest infestations of unspecified species in rangeland areas occurring on 7-mile strip along highway between La Grange and Snelling, Stanislaus and Merced Counties. Trimerotropis pallidipennis medium on dry range in Midway area, Alameda County. (Cal. Coop. Rpt.). UTAH - Grasshoppers common through most agricultural areas; infestation in Box Elder County spread to estimated 100,000 acres. Controls on rangeland in vicinity of Bryce Canyon and Cedar Springs will involve 600-1,000 acres. Outbreaks in Hayden area, Uintah County, now spotty, with Camnula pellucida infesting 5,000 acres. Controls to protect farmlands increasing generally. (Thornley, Knowlton). NEW MEXICO - Unspecified species averaged 35-40 per square yard on several hundred acres of idle farmland at Cuba, Sandoval County; averaged 30-40 per square yard on Espanola Valley cropland; and cropland infestation of 35-40 per square yard reported near Pojoaque, Santa Fe County. (N.M. Coop. Rpt.). OKLAHOMA - Medium to heavy populations (up to 25 per square yard) of several species noted along roadsides and in field margins in several areas of Alfalfa, Grant and Garfield Counties; ranged 2-7 per square yard in alfalfa and grain sorghum in same area. Medium to heavy populations noted in few crop margins in southeast area. (Okla. Coop. Sur.). KANSAS - Averaged less than 1 per square yard in southeast and east central sections, with Melanoplus femur-rubrum dominant. (Peters). SOUTH DAKOTA - Moving into croplands. One infestation in Buffalo County showed 30-40 per square yard along ditches and field margins; some movement into a cornfield, with heavy damage along border rows. Predominantly Melanoplus bivittatus, from third instar to adults. (Hantsbarger). NORTH DAKOTA - Cropland survey through northwest showed generally widespread light to severe grasshopper infestations; development averaged adult and dominant species included M. bilituratus and M. bivittatus; C. pellucida dominant at several locations in Mountrail, Burke and Divide Counties. Severe wheat-head clipping in some fields; leaf stripping common through area. Grasshoppers dispersed throughout most fields. Controls underway or completed in some sections. Drought now accentuating grasshopper threat to late crops. On rangeland, spot treatment of threatening to severe infestations on federal land in Slope, Golden Valley and McKenzie Counties near completion. Controls also underway in McLeod area. (N.D. Ins. Sur.). MINNESOTA - Increased movement of grasshoppers from soil bank land to adjacent crops expected. M. bivittatus now nearly all winged adults and M. femur-rubrum in third and fourth instars, with some winged adults. M. bilituratus adults have been present for 2 weeks and moving into cropland. (Minn. Ins. Rpt.).

WISCONSIN - Average counts, mostly M. femur-rubrum, per 10 sweeps in alfalfa, by counties, were: Sheboygan - 4.5; Washington - 2; Walworth - 10; Racine - 2.5; Kenosha - 3; Jefferson - 4. Prevalence of first-instar nymphs in these counties indicates some hatching still occurring. (Wis. Coop. Sur.). IOWA - Unspecified species varied 2-100 per square yard in fence rows; heaviest populations in Mills County. Populations will move into crops if dry weather continues. (Iowa Ins. Inf., July 25). INDIANA - Large numbers of several species migrating from newly cut hay fields to nearby vegetable crops, soybeans, corn and alfalfa. (Gould). MARYLAND - Melanoplus spp. injuring alfalfa in Allegany County and becoming abundant in fence rows in southern sections. (U. Md., Ent. Dept.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - IOWA - Results of annual first-brood survey (July 18-23) on accompanying map. State average 41 percent plants infested with average of 66 borers per 100 plants. Southern two-thirds of State will have moderate second brood on late-planted corn. (Iowa Ins. Inf.).



Figures =  $\frac{\text{Average percent plants infested}}{\text{Average number of borers per 100 plants}}$

MISSOURI - Adults emerging in central area; first second-brood egg mass observed. (Munson, Thomas, Wood). KANSAS - First-brood infestation survey in 24 corn fields in Jefferson County showed: 67 percent of fields examined infested, with 0-30 percent of plants infested (averaged 10.2 percent); number of borers per 100 plants ranged 0-37 (averaged 16.2 in infested fields); development was 44.7 percent larvae, 41 percent pupae and 14.3 percent emerged adults. (Burkhardt). SOUTH DAKOTA - Quite heavy on more advanced corn in southeast, with average infestation of 93 percent and 259 borers per 100 plants. Larvae range second to fifth instar. (Hantsbarger). WISCONSIN - Boring into stalks of early planted field corn in southeast; several fourth and fifth instars found. Pupation expected to begin soon and may be underway in advanced fields in warm areas; expected to be common next week in warmer sections of State, where normally 2 generations occur each year. (Wis. Coop. Sur.). MINNESOTA - First pupation observed in south central district; highest population, averaging 199 borers per 100 plants, in southwest. (Minn. Ins. Rpt.). NEW JERSEY - Numerous adults observed in Cumberland County on corn and potatoes. (Ins.-Dis. Newsl., July 26). MARYLAND - Second-generation adult emergence continues on Eastern Shore; generally light in midseason corn in all sections. (U. Md., Ent. Dept.). ALABAMA - Attacking grain sorghum in Tennessee Valley; third and fourth-instar larvae moderate in Madison County. (Grimes).

CORN EARWORM (Heliothis zea) - NEW JERSEY - Building up on sweet corn. (Ins.-Dis. Newsl., July 26). DELAWARE - Eighty percent of corn ears examined in one Sussex County field infested with second to fifth-instar larvae. (Burbutis, Mason). GEORGIA - Moderate on grain sorghum in Sumter County. (Johnson). OKLAHOMA - Light infestations becoming common in grain sorghum in southern half of State. (Okla. Coop. Sur.). NEW MEXICO - Causing considerable damage to sweet and field corn tassels, whorls and ears in Luna, Dona Ana and Chavez Counties. (N.M. Coop. Rpt.). UTAH - Few adults taken in light traps at Salem and Benjamin, Utah County, and Ogden, Weber County. Infestation moderate in sweet corn in Washington County. (Knowlton). Survey shows 6 percent of sweet corn ears contain eggs on silks in Utah County; smaller numbers recorded in Box Elder, Davis and Weber Counties. (Dorst, Broadbent).

FALL ARMYWORM (Laphygma frugiperda) - LOUISIANA - Severe outbreak occurred in southern area during past week; millet and pasture grasses suffering most damage, but populations increasing on other crops as favored hosts are depleted. Larvae averaged 12 per square foot in pasture grass in Washington Parish; more than 1 pint of larvae collected in 10 sweeps in grass on headlands of sweetpotato field in Acadia Parish. Larvae moving into rice fields in several areas. Lawns in Baton Rouge heavily attacked; infestations reported from most parishes south of Baton Rouge, including Iberia, St. Landry and Acadia. Controls being applied in most areas. (Spink). GEORGIA - Moderate on Coastal Bermuda grass in Cook County. (Smith). IOWA - First adult of season taken in light trap at Ames. (Iowa Ins. Inf., July 25).

ARMYWORM (Pseudaletia unipuncta) - MINNESOTA - Light adult collections recorded at Fergus Falls, Worthington and Shakopee. Small numbers of second to fourth-instar larvae in barley in Fergus Falls area; heavy damage to field of sweet corn in Hanska area, Brown County. (Minn. Ins. Rpt.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Damage continues to increase. Active in Sumter County, with moderate damage in late-planted corn. (Grimes).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Light populations (2 per head) noted for first time this season in field of early planted grain sorghum in Atoka County. (Okla. Coop. Sur.).



CORN LEAF APHID (Rhopalosiphum maidis) - NEVADA - Averaged 100 per head in grain in Lamaille, Elko County. (Hampton, Parker; July 22). UTAH - Damaging several hundred acres of late barley in Sanpete and Emery Counties; also, some barley fields in Nephi-Levan area, Juab County. (Knowlton). Controls applied to 600 acres of second-crop alfalfa in Emery County. (Olson, Knowlton). COLORADO - Colonies averaged 3-7 per 10 corn plants in Morgan County. (Colo. Ins. Sur.). NEW MEXICO - Abundant on Luna County grain sorghum. (N. M. Coop. Rpt.). OKLAHOMA - Light populations (up to 50 per stalk) common in grain sorghum up through boot stage throughout State. Heavier populations causing some concern in localized areas in various sections. (Okla. Coop. Sur.). SOUTH DAKOTA - Found in practically all corn in southeast area; populations generally light, with only a few aphids in tassels. (Hantsbarger). MINNESOTA - Heavy on barley in western Marshall and Kittson and northwest Polk Counties. Predators, largely lady beetles, increasing in area. Damage has already occurred to late barley and natural control is too late. High numbers on corn whorls in all districts; none seen on emerging silks. (Minn. Ins. Rpt.). WISCONSIN - Building up on tassels of early planted field corn in southeast; 80 percent of tassels infested with estimated 5-10 individuals per colony in 1 field. Damaging numbers depend on parasites, predators and/or heavy rains. (Wis. Coop. Sur.). ILLINOIS - Increasing; present on tassels in early fields. Infestation ranges 0-28 percent of tassels infested; average is less than 2 percent. (Ill. Ins. Rpt.). OHIO - Infestations noted in various parts of State; highest infestation in 10 fields in Putnam County was 15 percent of plants heavily infested (Gerber); in Pike County, 3 fields out of 5 examined had 31, 32 and 35 percent of plants heavily infested and requiring control (Blair). ALABAMA - Moderate on grain sorghum and field corn in Hale County. (Grimes).

AN APHID - GEORGIA - An unspecified species heavy on milo in Elbert County (Beasley, July 20) and on grain sorghum in Bleckley County (Johnson).

GRAIN APHIDS - WISCONSIN - Very sharp decline in Macrosiphum granarium and Toxoptera graminum populations in oats noted in southeast, where overall average was less than 5 per sweep. Lady beetle adults and larvae outnumbered aphids 4 to 1 in some fields. Heavy rains, parasites, predators, disease and maturing grain attributed to decrease. Averaged 63 per 10 sweeps in oat fields in Sheboygan County and 15 in Washington County. (Wis. Coop. Sur.). WYOMING - T. graminum averaged 15 per 100 sweeps in fields of wheat examined in Cody area, Park County. (Fullerton). UTAH - M. granarium population below normal this season. (Knowlton).

CHINCH BUGS (Blissus spp.) - MISSOURI - B. leucopterus damaging corn in central area. (Munson, Thomas, Wood). OHIO - B. leucopterus in several Putnam County locations. (Gerber). ALABAMA - B. leucopterus insularis causing severe damage to St. Augustine grass lawns in Clanton; infestations increased rapidly during past few weeks. (Helms). LOUISIANA - B. leucopterus insularis continues severe on St. Augustine grass lawns in all areas. (Spink).

A FALSE CHINCH BUG (Nysius sp.) - TEXAS - Attacking grain sorghum heads in Lynn County; infestations local and spotted, but heavy in some small areas. (Griffin).

RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Adults ranged 0-40 and nymphs 1-28 per 100 sweeps in 16 rice fields in St. Landry Parish. (Spink).

CORN ROOTWORMS (Diabrotica spp.) - DELAWARE - Adults of D. undecimpunctata howardi on corn in New Castle County. (Burbutis, Mason). MISSOURI - D. longicornis adults emerging in central and west central areas and feeding on silks of corn; counts ranged 2-7 per corn ear. (Munson, Thomas, Wood). IOWA - In southwest, adults of D. longicornis averaged 4-6 per plant in silked corn, D. virgifera 1 per plant and D. undecimpunctata howardi 1 per 5 plants. Small larvae still in soil. (Iowa Ins. Inf., July 25). WISCONSIN - D. longicornis injury noted as far north as Ripon; adults first observed at Arlington, July 22; will become more numerous. (Wis. Coop. Sur.). SOUTH DAKOTA - Serious infestation of D. virgifera reported from Fall River County; adults extremely numerous in certain fields; larval damage quite prominent. Adults of D. longicornis and D. virgifera appearing in corn in southeast; some fields showing lodging and "goose-necking" of stalks. (Hantsbarger).

KANSAS - Infestation of D. longicornis ranged 0-80 percent of corn plants infested in Jefferson County fields; some fields show severe damage. Adult emergence complete. (Peters). COLORADO - D. virgifera caused 25-35 percent damage to field of corn in Larimer County; larvae pupated and emerging adults feeding on leaves, tassels and silk. (Colo. Ins. Sur.).

SAP BEETLES (Carpophilus spp.) - MARYLAND - Common in maturing sweet and field corn in all sections. (U. Md., Ent. Dept.). DELAWARE - C. lugubris adults common in corn in New Castle and Kent Counties; adults and larvae in ears of corn in Sussex County, particularly those infested with corn earworm. (Burbutis, Mason).

WHEAT STEM SAWFLY (Cephus cinctus) - NORTH DAKOTA - Completion of annual survey in northwest showed threatening infestations in Renville, Bottineau and northern Ward Counties; elsewhere infestations were extremely light. Percentage of stems infested ranged 0-76; averaged 12.1. (N.D. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Averaged 1-2 per sweep in Preston-Lund area, White Pine County, and in Pahranaagat Valley, Lincoln County. (Parker, July 22). UTAH - Populations remain low over most of southwestern area; practically absent in central and northern areas. (Knowlton). COLORADO - Averaged 1,000-2,000 per 100 sweeps in alfalfa near Pritchett, Baca County; 20-100 per 100 sweeps in Prowers and Bent Counties, 0-20 in Otero County and 5-10 in Mesa County; none found in Weld, Larimer or Morgan Counties. (Colo. Ins. Sur.). OKLAHOMA - Continues light to heavy in alfalfa surveyed in Alfalfa, Grant and Garfield Counties; ranged 20-250 per sweep. Populations in central area dropped considerably following recent heavy rains; ranged none to 7 per sweep. Counts ranged 8-300 per sweep in south central and southwest districts. (Okla. Coop. Sur.). KANSAS - Averaged less than 5 per sweep in alfalfa checked in southeast area. (Peters). MINNESOTA - Found in Lyon County, week of July 11; 2 per 400 sweeps; repeated examination failed to reveal specimens. (Minn. Ins. Rpt.).

PEA APHID (Macrosiphum pisi) - NEVADA - Heavy infestation in field of alfalfa in Sparks, Washoe County, stunting plants. (Galloway, July 22). Averaged 5-10 per sweep in Elko, 150-200 in Lamaille and 40-75 in Ruby Valley, Elko County; 5-15 in Spring Valley, 5-10 in Preston-Lund area and 10-20 in Baker, White Pine County; and 5-10 in Pahranaagat Valley, Lincoln County. (Parker, July 22). UTAH - Damaging second-crop alfalfa in Juab, Davis, Sanpete, Sevier and Weber Counties; controls applied some fields. (Knowlton, Rogers). Moderately damaged several hundred acres of alfalfa in Enterprise-Beryl area, Washington and Iron Counties. Controls applied. (Knowlton). WYOMING - Averaged 25 per sweep in alfalfa in Big Horn Basin and Fremont County. (Fullerton). COLORADO - Averaged 10,000-20,000 per 100 sweeps of alfalfa in Delta, Mesa and Montrose Counties; 250-1,000 in Morgan, Weld and Larimer Counties. (Colo. Ins. Sur.). OKLAHOMA - Ranged 5-20 per sweep in alfalfa surveyed in Alfalfa, Grant and Garfield Counties; none reported in alfalfa in other areas. (Okla. Coop. Sur.). WISCONSIN - Relatively low in alfalfa; winged forms scarce and diseased or parasitized aphids not readily found. Average counts per 10 sweeps in regrowth alfalfa, by county, were: Sheboygan - 63; Washington - 15; Walworth - 48; Racine - 30; Kenosha - 25; Jefferson - 31. Predators not overly abundant in most fields. (Wis. Coop. Sur.). MINNESOTA - Marked population reduction during past 2 weeks on alfalfa; counts per 10 sweeps went from 500-1,000 to less than 50. Predator numbers quite high. (Minn. Ins. Rpt.). MARYLAND - Numbers increasing on alfalfa in central section; ranged 15-70 per sweep in 25 fields surveyed. (U. Md., Ent. Dept.). DELAWARE - Remains generally low in alfalfa throughout State. (Burbutis, Mason).

CLOVER APHID (Anuraphis bakeri) - DELAWARE - Averaged 20 per sweep in 1 field of clover in Kent County; first report of season. (Burbutis, Mason).

LYGUS BUGS (Lygus spp.) - NEVADA - Average 1-3 per sweep in alfalfa in Elko County, 3-6 in White Pine County and 5-10 in Lincoln County. (Parker, July 22). UTAH - Extremely numerous in Tooele County alfalfa seed crops. (Knowlton). WYOMING - Averaged 5 adults and 4 nymphs per sweep in alfalfa in Big Horn Basin and 4 adults and 6 nymphs per sweep in alfalfa seed fields in Fremont County. (Fullerton).

COLORADO - Counts in alfalfa averaged 50-100 per 100 sweeps in Morgan, Weld and Larimer Counties, and 50-200 in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). OKLAHOMA - Counts, mostly L. lineolaris, range 1-3 per sweep in alfalfa left for seed in central and southwest areas. (Okla. Coop. Sur.). SOUTH DAKOTA - Averaged 2-3 nymphs and adults per sweep in southeast area alfalfa. (Hantsbarger).

TARNISHED PLANT BUG (Lygus lineolaris) - MARYLAND - Common on hay crops in central counties; up to 15 per sweep on alfalfa in Frederick County. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Abundant and causing yellowing of alfalfa in parts of Calvert and Howard Counties. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs increasing slightly on soybeans in all counties. (Burbutis, Mason). RHODE ISLAND - Adults abundant on alfalfa in South Kingstown. (Hansen, July 25).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Averaged 1 per sweep, but increasing, in central and south central areas. (Okla. Coop. Sur.). ALABAMA - Heavy on soybeans in Baldwin County. (Eden).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - SOUTH DAKOTA - Averaged 15 per 10 sweeps on flax in east central section. (Hantsbarger). MISSOURI - Heavy flights of this species and Draeculacephala sp. observed throughout central and northern areas. (Munson, Thomas, Wood).

ALFALFA WEEVIL (Hypera postica) - CALIFORNIA - Adults found in field of alfalfa southwest of Dos Palos, Merced County, which is in line with southern extension of known infestation in State. (Cal. Coop. Rpt.). NEVADA - Averaged 3-5 adults and larvae per sweep in Preston-Lund area, White Pine County. (Parker, July 22). WYOMING - Averaged 5 adults and 8 larvae per 25 sweeps in alfalfa in Big Horn Basin. (Fullerton). MARYLAND - Light to moderate numbers of adults, and occasionally larvae, taken on alfalfa in central and western sections. (U. Md., Ent. Dept.). RHODE ISLAND - Low numbers of adults and mature larvae in alfalfa in South Kingstown. (Hansen, July 22).

CLOVER ROOT CURCULIO (Sitona hispidula) - MARYLAND - Averaged 3-15 adults per 25 sweeps on alfalfa and red clover in Cecil County. (U. Md., Ent. Dept.).

WHITE GRUBS (Phyllophaga spp.) - ILLINOIS - Damaging soybeans and corn in spotted areas of central section; averaged 5 per 6-linear-inch of row in 1 field of soybeans in damaged area. (Ill. Ins. Rpt.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - COLORADO - Averaged 20-30 per 100 sweeps in Larimer, Weld and Morgan County alfalfa. (Colo. Ins. Sur.). WYOMING - Larvae averaged 6 per 25 sweeps in alfalfa in Big Horn Basin and Fremont County. (Fullerton). SOUTH DAKOTA - Averaged 1 larva per 10 sweeps on alfalfa throughout southeast district. (Hantsbarger).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Averaged 3 small larvae per sweep on alfalfa in Cecil County; lighter numbers on red clover. (U. Md., Ent. Dept.). DELAWARE - Averaged 13 larvae per 10 sweeps in New Castle County alfalfa, 4 in Kent County; present on soybeans in all counties; averaged 2 per sweep in Kent County clover field. (Burbutis, Mason).

CUTWORMS - CALIFORNIA - Peridroma saucia heavy in alfalfa in New Pine Creek, Modoc County. (Cal. Coop. Rpt.). NEVADA - Heavy infestations of an unspecified species retarding growth of second crop alfalfa in Douglas, Pershing and Washoe Counties. (Galloway, Martinell, Weaver; July 22). ALABAMA - Feltia subterranea heavy in isolated fields of late-planted soybeans in Baldwin County. (Eden). GEORGIA - An unspecified species causing light to heavy defoliation of peanuts throughout southern portion of State. (Johnson).

A WEBWORM (Loxostege sp.) - OKLAHOMA - Medium to heavy in some fields in Alfalfa, Grant and Garfield Counties. (Okla. Coop. Sur.).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Heavy in late plum fruit in Visalia, Tulare County. (Cal. Coop. Rpt.). MISSOURI - Untreated check trees in Kansas City area showed new entries July 17; in Columbia vicinity, untreated trees showed half to full-grown larvae July 26. Attack by this species has been extremely light this year, generally. (Wkly. Rpt. Fr. Gr.). INDIANA - Peak hatch for second brood completed in Vincennes area; weather conditions ideal for heavy oviposition by late first-brood adults. (Hamilton, July 25). WISCONSIN - Second-brood adults caught in blacklight trap at Middleton. (Wis. Coop. Sur.). NEW JERSEY - Second-brood larvae found in apples in Burlington County. (Ins.-Dis. Nwsl., July 26).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - MISSOURI - Infestations in northwest not heavy, but half-grown larvae readily found, especially on water sprouts on inside of trees. May be troublesome at harvest. (Wkly. Rpt. Fr. Gr.). WEST VIRGINIA - Most moths had emerged from apples in eastern panhandle by July 8, and populations had decreased by July 12. (W. Va. Ins. Sur.). MASSACHUSETTS - Hatching of second brood underway. (Crop Pest Cont. Mess.).

A FLEA BEETLE (Altica foliacea) - NEW MEXICO - Damaged apple foliage in Dona Ana County orchards. (N. M. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Adults continue to emerge. (Minn. Ins. Rpt.). WISCONSIN - Adults emerging throughout State, but emergence has been slow. (Wis. Coop. Sur.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - SOUTH DAKOTA - Infesting apple trees in Lawrence County. (Hantsbarger).

ORCHARD MITES - MINNESOTA - Recent, hot, dry weather has been favorable for build-up. (Minn. Ins. Rpt.). INDIANA - Panonychus ulmi and Tetranychus telarius increased rapidly during past 10 days in Vincennes area, where adequate controls not applied. Present hot, dry weather ideal for buildup, especially of T. telarius. (Hamilton, July 25). MISSOURI - T. telarius averaged about 2 per leaf, with numerous eggs present, in central area; in northwest, T. telarius and P. ulmi readily found in most orchards. Infestations may increase if hot weather continues. (Wkly. Rpt. Fr. Gr.). WEST VIRGINIA - Populations of unspecified species were increasing in eastern panhandle apple orchards, July 12. (W. Va. Ins. Sur.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Bait-trap captures of second-brood adults reached peak in Vincennes area, July 21; adults and unhatched eggs still in orchards. (Hamilton, July 25). MISSOURI - Larvae vary from very fresh to half-grown in peach terminals in central area; in northwest, a brood appeared about 2 weeks ago. New brood due in southeast soon. (Wkly. Rpt. Fr. Gr.). KANSAS - Larvae in early peaches fully developed and leaving fruit in Sedgwick County; 70 percent fruit injury noted in 3 orchards. Twig injury prevalent in most orchards. (Eshbaugh). CALIFORNIA - Heavy in nectarine fruit in Visalia, Tulare County. (Cal. Coop. Rpt.).

PEACH TREE BORERS (Sanninoidea spp.) - KANSAS - Fifty-two empty pupal cases of S. exitiosa counted on 1 check tree in experimental control plots in Sedgwick County; some early-June larvae about three-fourths grown. (Eshbaugh). OREGON - S. exitiosa graefi adults have been emerging from prune orchards in Willamette Valley since early July. (Koontz).

PEACH TWIG BORER (Anarsia lineatella) - CALIFORNIA - Heavy population on peach in Placerville, El Dorado County. (Cal. Coop. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - WISCONSIN - Caused drop of many plums in Dane County area. (Wis. Coop. Sur.).

AN ERIOPHYID MITE (Aculus fockeui) - CALIFORNIA - Heavy on prune in Cupertino, Santa Clara County. (Cal. Coop. Rpt.).

AN AMATID MOTH (Lymire edwardsii) - CALIFORNIA - Larvae developed on shipment of Ficus decora from outside the State, in a nursery property in San Fernando, Los Angeles County. Collected by H. Miller; det. by L. E. Meyers. Eradication treatment given all host plants in greenhouse; all other plants also treated. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

APHIDS - NEW JERSEY - Myzus persicae infesting potatoes and peppers in southern sections. (Ins.-Dis. Newsl., July 26). DELAWARE - M. persicae numerous on young cauliflower and cabbage in Kent County, with some yellowing; common on lima beans in New Castle and Kent Counties and present on sweetpotatoes in Sussex County; building up on peppers and tomatoes, statewide. Macrosiphum solanifolii common on Kent County squash and Sussex County tomatoes. (Burbutis, Mason). WISCONSIN - Unspecified species heavy on tomatoes in several sections. Brevicoryne brassicae heavy on some cabbage plantings in Racine and Kenosha Counties; parasitism of colonies as high as 90 percent. (Wis. Coop. Sur.). COLORADO - On potatoes, Myzus persicae averaged 20-100 per 100 sweeps in Weld and Morgan Counties and Macrosiphum solanifolii averaged 5-10 per 100 sweeps in Montrose County. (Colo. Ins. Sur.).

Potato Aphids in Maine - Macrosiphum solanifolii is still the predominant species on potato foliage in Presque Isle and vicinity, followed by Aphis nasturtii, Myzus persicae and M. solani. (Shands).

POTATO LEAFHOPPER (Empoasca fabae) - NORTH DAKOTA - Populations increased on Red River Valley potatoes; ranged 3-10 per 10 sweeps; low at Beach, Golden Valley County. (N. D. Ins. Sur.). SOUTH DAKOTA - Populations increased to 4 adults per sweep on potatoes in east central area. (Hantsbarger). COLORADO - Ranged 10-30 per 100 sweeps on potatoes in Morgan and Weld Counties. (Colo. Ins. Sur.). DELAWARE - Adults and nymphs common on potatoes and cucumbers in New Castle County and on lima beans over State. Nymphs on watermelon in Sussex County. (Burbutis, Mason).

LEAFHOPPERS - WISCONSIN - Potato leafhoppers scarce on treated potatoes in Jefferson, Racine and Kenosha Counties, but building up in Rice Lake and Spooner areas. Averaged 2 per 10 sweeps on a planting of mint in Jefferson County. (Wis. Coop. Sur.). COLORADO - Macrosteles fascifrons ranged 10-50 per 100 sweeps in Morgan and Weld Counties, on potatoes. Numbers increased tenfold over previous week's count; 1,896 trapped at Greeley and 2,668 at Rocky Ford. (Colo. Ins. Sur.).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Adults numbered 2-4 per 100 sweeps of potato plants in Wiggins area, Morgan County, and in Weld County. (Colo. Ins. Sur.). CALIFORNIA - Heavy on garden tomatoes in Sacramento, Sacramento County. (Cal. Coop. Rpt.). WYOMING - Adults averaged 1 per 100 sweeps in each potato field sampled in Big Horn Basin. No eggs found. (Fullerton).

LYGUS BUGS (Lygus spp.) - SOUTH DAKOTA - Nymphs and adults averaged 8 per 10 sweeps on potatoes in Brookings area. (Hantsbarger).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - SOUTH DAKOTA - Average of 1 adult per 20 sweeps on potatoes in vicinity of Brookings. (Hantsbarger). NORTH DAKOTA - Commercial field infestations continue low or nonexistent. (N. D. Ins. Sur.). WYOMING - Adults averaged 5 per 100 sweeps in potato fields in Park County. (Fullerton). UTAH - Severe damage to 3 potato fields in Weber County in areas northwest of Ogden. Infestations light to spotty elsewhere in the county. (Knowlton).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praeifica) - CALIFORNIA - Heavy on tomato plantings in Le Grand, Merced County. (Cal. Coop. Rpt.).

HORNWORMS (Protoparce spp.) - INDIANA - P. sexta abundant on tomatoes and destroying terminal growth and many small fruits. P. quinquemaculata increasing in numbers. (Gould). NEW MEXICO - Protoparce sp. heavy and damaging tomato plants in Luna County fields, with 2-5 larvae per plant common; light to heavy infestations also damaging chili in same county. Most growers have treated. (N. M. Coop. Rpt.).

TOMATO FRUITWORM (Heliothis zea) - OHIO - Extensive damage to commercial tomato planting in Ross County. (Glass).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - OREGON - Building up high populations in bean fields in the Willamette Valley. (Morrison).

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Larvae light to moderate in untreated bean fields in Delta County; 2-5 larvae per plant and 1-3 plants out of 10 infested in Morgan County. (Colo. Ins. Sur.). IDAHO - As of July 29, infesting 80 backyard gardens in Jerome, Jerome County. No population found in commercial or contract bean fields surrounding Jerome. Eradication program underway. (Gittins, Portman).

BEAN APHID (Aphis fabae) - MARYLAND - Heavy numbers on large acreage of lima beans at Church Hill, Queen Annes County. (U. Md., Ent. Dept.). DELAWARE - Common on young lima bean plants in New Castle County. (Burbutis, Mason).

PEA APHID (Macrosiphum pisi) - WISCONSIN - Averaged 30.4 per 10 sweeps on late peas in Sheboygan County. If conditions remain favorable, some fields may require another treatment before harvest. (Wis. Coop. Sur.).

NOCTUIDS - CALIFORNIA - Trichoplusia ni and Autoplusia egena as high as 1 per sweep on cabbage. (R. Magor).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Moderate feeding injury to cucumbers in New Castle County and common on lima beans in same county. (Burbutis, Mason).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Counts 20-30 per 100 sweeps in Mesa County sugar beets. Causing 40 percent incidence of western yellow blight on tomatoes in Mack, Loma and Fruita areas, Mesa County. (Colo. Ins. Sur.).

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Scattered moderate to severe larval infestations continue in Red River Valley sugar beet fields. Adults, egg masses and larvae all present in many fields and control hampered by wide variance in webworm development. (N. D. Ins. Sur.). WYOMING - Larvae averaged 3 per 100 plants in sugar beet fields in Big Horn Basin. (Fullerton).

A ROOT MAGGOT - WYOMING - Unidentified species damaging some sugar beet fields in Worland area, Washakie County. Few fields total loss and being plowed up. (Fullerton).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Averaged 38 per 100 sweeps in fields of sweetpotatoes in Acadia Parish; ranged 1-6 in St. Landry Parish. (Spink).

A TORTOISE BEETLE (Agroiconota bivittata) - LOUISIANA - Averaged 19 per 100 sweeps in sweetpotatoes in Acadia Parish. Ranged 0-11 in St. Landry Parish. (Spink).

ARMYWORMS - NEW MEXICO - Larvae of unspecified species stripped about 30 acres of onions near Deming, Luna County. (N. M. Coop. Rpt.). LOUISIANA - Laphygma frugiperda averaged 75 per 100 sweeps in sweetpotato fields in Acadia Parish. (Spink).

ONION THRIPS (Thrips tabaci) - COLORADO - Averaged 5-10 per onion plant in Morgan County. (Colo. Ins. Sur.). MARYLAND - Injuring onions locally in Allegany County. (U. Md., Ent. Dept.).

ONION MAGGOT (Hylemya antiqua) - COLORADO - Averaged 3-10 pupae and 5-12 larvae per linear foot of row in onions in Adams County; loss was 75-90 percent. (Colo. Ins. Sur.).

A MEADOW NEMATODE (Pratylenchus penetrans) - INDIANA - Damaging onions growing on muck soil in Jasper and Starke Counties. (Ferris).

SPIDER MITES - MARYLAND - Heavy and severely injuring several new strawberry plantings in Somerset and Wicomico Counties. (U. Md., Ent. Dept.). OREGON - Infestation of Tetranychus sp. general in mint-growing areas of Jefferson County. Infested plants exhibit a leaf-drop symptom. Injury appears especially abundant around field edges. Control kept loss to a minimum in most cases. (Morrison).

CUTWORMS - OREGON - Agrotis ipsilon injured 60 percent of a new planting of strawberries in Scoggins Valley near Forest Grove. On July 20, 2-3 cutworms per plant found in field. (Hanna). NEVADA - Unspecified species moderate to heavy in southern Washoe County home gardens. (Bechtel et al., July 22). ALABAMA - Cutworms caused considerable damage to late-planted beans in Baldwin County. Feltia subterranea is the most prevalent. In Chilton County, these insects also damaging pepper and various other garden crops. (Helms).

LOOPERS - OREGON - Unidentified species appeared in Lane County mint plantings week of July 24; averaged 3-4 per 10 sweeps. This is second generation of loopers in mint this season. (Morrison). INDIANA - Moderate numbers of Rachiplusia ou on peppermint and spearmint. (Gould).

RASPBERRY FRUITWORMS - WISCONSIN - Reported heavier in Madison area, on raspberries, than in previous years. (Wis. Coop. Sur.).

GARDEN SYMPHYLID (Scutigera immaculata) - OREGON - Infesting a 4-acre broccoli field and scattered strawberry fields in Woodburn area, Marion County. As many as 8 adults and larvae found on a single broccoli root. (Hanna).

#### TOBACCO INSECTS

BLACK CUTWORM (Agrotis ipsilon) - NORTH CAROLINA - Cutting off leaves of burley tobacco in Madison County. (England, Rabb).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Adults common and injuring choice leaves of tobacco at several places in Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Continues a serious problem on much of the early tobacco in all tobacco-growing counties. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Heavy rains in some areas and increased weevil activity creating problem. (Cott. News Lett.). SOUTH CAROLINA - Increasing in Aiken, Bamberg, Lee and Clarendon Counties. Up to 70-80 percent infestation in infested fields in this area. Several Piedmont counties report fields losing half of squares to weevils. (Cott. Lett.). Migration from heavily infested fields expected within 10 days at Florence. (Taft et al., July 27). TENNESSEE - Weevils very active in areas of west Tennessee. In southern part of area, punctured square counts average 25 percent. (Locke). GEORGIA - Counts in 46 fields in middle and south Georgia ranged 0-84 percent punctured squares,

averaging 19 percent. (Reed, Milner, Johnson). ALABAMA - Increase continues in most areas. Squares scarce in south and central sections, with migration underway in isolated areas. In northern counties, continues to increase in untreated cotton; highest infestation 60 percent, in Madison County. (Grimes). MISSISSIPPI - Second-generation weevils common in delta but counts generally low. (Merkl et al.). LOUISIANA - Square inspection in 67 fields; all found infested. Average infestation 13 percent. (Smith et al.). ARKANSAS - Second-generation emergence underway. Wide variation in field-to-field counts. (Ark. Ins. Rpt.). MISSOURI - Punctured squares ranged 0-17 percent in 28 fields. (Munson, Thomas, Wood). OKLAHOMA - Control underway in most areas. Counts vary widely in most areas, but overall infestation average approximately 10 percent. (Okla. Coop. Sur.). TEXAS - Continues serious threat in south, east and central areas. (Hawkins, Hanna, July 26). Averaged 41.6 percent punctured squares in 29 treated fields and 67.4 percent punctured squares in 12 untreated fields in McLennan and Falls Counties. (Parenica et al.).

BOLLWORMS (*Heliothis* spp., et al.) - NORTH CAROLINA - Expected to become a threat in almost all fields. (Cott. News Lett.). SOUTH CAROLINA - Damage to squares and young bolls continues over State. Most damage in lower Coastal Plains and Piedmont. (Cott. Lett.). Infestations held down for effective treatment used in Florence. (Taft et al.). TENNESSEE - Infestations over cotton area, average 4 small larvae per 100 terminals. (Locke). GEORGIA - Egg counts in 46 fields in middle and southern counties show average of 53 per 100 terminals. Larvae average 9 per 100 terminals. (Reed, Milner, Johnson). ALABAMA - Again increasing throughout State, but larvae still light in northern counties. Egg count in central and southern areas from over 75-100 terminals. In several cases, up to 10-15 per 100 terminals. (Grimes). MISSISSIPPI - Moth flights increased in delta counties, but eggs and larvae are not increasing proportionally. Oviposition and hatching on succulent cotton medium to heavy. (Merkl et al.). ARKANSAS - Moths continue to emerge in large numbers. (Ark. Ins. Rpt.). LOUISIANA - Average square infestation of 3 percent in 60 of 67 fields examined in Madison Parish. In 35 fields, eggs averaged 7 and larvae 2.2 per 100 terminals. Nearly all fields have been treated. (Smith et al.). TEXAS - Continuing to occur in succulent fields. Injurious infestations continue in McLennan and Falls Counties; average 7.4 eggs and 3.1 larvae per 100 terminals in 41 fields. (Parenica et al.) Continues serious threat in southeast and central areas. (Hawkins, Hanna, July 26). MISSOURI - Of 862 fields scouted, 197 infested, with 0-6 eggs and 0-4 larvae per 100 terminals. (Munson, Thomas, Wood). OKLAHOMA - Beginning to build up to economic proportion in a few isolated southern areas. (Okla. Coop. Sur.). ARIZONA - Infestations increased to damaging numbers in some fields in Mesa. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - GEORGIA - Light to moderate in 8 counties. (Reed, Milner, Johnson). ALABAMA - Infestations continue to spread over State. Light to moderate defoliation in Geneva, Coffee, Elmore, Autauga and Dallas Counties. (Grimes). OKLAHOMA - Localized damage in a few fields in Caddo and Tillman Counties. (Okla. Coop. Sur.). NEW MEXICO - Light to heavy infestations damaging cotton near Tucumcari, Quay County; 5 to 6 larvae per plant in many fields. (N. M. Coop. Rpt.).

BEE T ARMYWORM (*Spodoptera exigua*) - ARIZONA - Requiring control in the Marana area, Pima County. Continues problem in areas of Pinal County. (Ariz. Coop. Sur.).

AN ARMYWORM - NEW MEXICO - Parts of several cotton fields defoliated in Deming area. (N. M. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Severe damage in some fields in Pinal County. Averaged 20-40 per 100 sweeps in Maricopa County. (Ariz. Coop. Sur.).

FLEAHOPPERS - TEXAS - Damage in western and northern portions. (Hawkins, Hanna, July 26). MISSOURI - From 0-19 per 100 terminals in 709 fields. (Munson, Thomas, Wood). OKLAHOMA - Continues to cause some concern in local southwestern and



west central areas. (Okla. Coop. Sur.) NEW MEXICO - Generally light in Dona Ana and Luna Counties. (N. M. Coop. Rpt.).

SPIDER MITES - SOUTH CAROLINA - Mostly a problem in area below Columbia. (Cott. Lett.). TENNESSEE - Increasing rapidly; spotted cotton justified in many fields. (Locke). GEORGIA - Light to moderate in Johnson, Laurens, Bleckley, Sumter, Schley, Dooly Counties. Heavy in Taylor. (Reed, Milner, Johnson). ALABAMA - Some evidence of damage in most fields of Tennessee Valley. Heavy rains have helped to keep infestations down. (Grimes). MISSISSIPPI - Light to medium; scattered over many fields in delta counties. Some spotted treatment. (Merkl et al.). ARKANSAS - Increasing. (Ark. Ins. Rpt.). MISSOURI - Of 860 fields scouted, 375 had marginal or spotted infestations. (Munson, Thomas, Wood). ARIZONA - Some fields in Pinal County still have heavy infestations. (Ariz. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - SOUTH CAROLINA - Continues to gain importance as a serious pest in many upper Coastal Plain counties. Beginning to appear in Piedmont fields. (Cott. Lett.). GEORGIA - Light to heavy on cotton in Johnson, Laurens, Bleckley, Sumter, Schley and Dooly Counties. (Milner, Johnson).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - MONTANA - *Dendroctonus pseudotsugae* killing scattered groups of Douglas-fir within Rock Creek, Lolo National Forest, and along Madison River, Gallatin National Forest, during July. (Mont. Coop. Rpt.). CALIFORNIA - Jeffrey pine in a 4,500-acre stand in Clarks Fork area, Stanislaus National Forest, showing severe damage by *D. jeffreyi* and *Ips emarginatus* in pole to mature trees in groups up to 16. Same condition exists in Big Meadows district. Trees infested in 1959 and insects now left infested trees; heavy loss of Jeffrey pine in area anticipated late in 1960. (J. Benediktson, R. Hall, L. Erickson). An estimated 75-100 currently infested ponderosa, sugar pine saplings and saw timber dying from *D. monticolae* and *D. brevicornis* in a 200-250-acre stand in the Black Rock area, Sierra County. In a 50-acre stand in the old Patterson Mill site, 100-120 young growth pines are infested as well as 20 ponderosa pines in a 15-acre stand in the Cole Springs area. Sanitation and salvage logging done last fall and this spring. (*E. E. Konvaler*). *Ips* spp. causing complete kill of ponderosa pine in groups, killing about 400 pole-sized trees in Eagle Lake area, Lassen County. *Scolytus ventralis* and *Melanophila drummondii* damaged old Douglas-firs in Redwood Creek area, Humboldt County. (*T. E. Connors, J. M. Lundgren*). *S. ventralis* occurred as an outbreak in young pole-sized white fir, killing tops and entire trees on east slope of Kettle Rock, Greenville district, Plumas National Forest. (*L. P. Geils*). *S. ventralis* on the increase in the Plumas National Forest. (*Wickman, Intorf*). *Ips* spp. and *D. brevicornis* caused a few fades in a 640-acre ponderosa pine stand in Pierce Valley in the Sequoia, Tulare County. (*D. Schlobohm*).

SAWFLIES - MONTANA - Moderate infestation of at least 2 species of *Neodiprion* spread over Little Rockies area, Lewis and Clark National Forest; feeding on old needles of ponderosa and lodgepole pines; eggs and 3 larval stages collected during June. (Mont. Coop. Rpt.). MINNESOTA - Populations of *N. lecontei* building up in young jack pine plantation in White Pine State Forest, Aitkin County. Larvae on jack pine in Carlton, Pine, Aitkin, Crow Wing, Cass and Itasca Counties. *Diprion similis* adults emerging in Pine and Carlton Counties. In Crow Wing and Cass Counties, samples yielded 210 late-instar larvae at Mission Lake where treatment is underway. (Minn. Ins. Rpt.). DELAWARE - *Caliroa* sp. on white oak in northern Kent County. Noticeable feeding injury. (*Burbutis, Mason*).

LARCH SAWFLY (*Pristiphora erichsonii*) - MONTANA - Larvae feeding on western larch along Blackfoot River during July. Infestation light and has reappeared for past several years. (Mont. Coop. Rpt.). MINNESOTA - Largely third and fourth instars in St. Louis, Pine, Aitkin, Crow Wing, Carleton and Lake Counties; some spinning up. (Minn. Ins. Rpt.). WISCONSIN - Defoliation severe in many northern tamarack stands. Larvae cocooning in Dane County, July 22. (Wis. Coop. Sur.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - MONTANA - Very heavy on Douglas-fir needles east of Seeley Lake during July. (Mont. Coop. Rpt.). CALIFORNIA - Infestation on a 60-acre area of Sitka spruce and Douglas-fir reproduction at North Bear Ridge, Humboldt County. (R. Madison).

AN APHID (Pineus sp.) - MONTANA - Moderate on ponderosa pine within Custer National Forest during June. (Mont. Coop. Rpt.).

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW MEXICO - Widespread, moderate to heavy infestations in mixed stands of Douglas-fir and white fir in northern part of State appear more intense than in 1959. (N. M. Coop. Rpt.).

LODGEPOLE NEEDLE MINER (Recurvaria milleri) - MONTANA - Light infestation north of Zortman, Phillips County, on lodgepole pine reproduction; larvae on surface of some needles and pupation had begun within other needles near end of June. (Mont. Coop. Rpt.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MARYLAND - Heavy on Virginia pine at Annapolis. (U. Md., Ent. Dept.). UTAH - Damage below normal this season. (Knowlton).

RED-LEGGED GRASSHOPPER (Melanoplus femur-rubrum) - WISCONSIN - Feeding on a pine plantation in Columbia County in sufficient numbers to warrant treatment. (Wis. Coop. Sur.).

COCCIDS - OKLAHOMA - Kermes sp. still numerous in some oaks in Garvin and Murray Counties. (Okla. Coop. Sur.). OREGON - Asterolecanium variolosum causing concern by attack on oaks in Eugene area. Frequently, twigs being killed and trees devitalized. (Tinker). CALIFORNIA - A. arabidis heavy on pittosporum in Marysville, Yuba County. Chionaspis etrusca medium on Tamarix in Elk Grove, Sacramento County. (Cal. Coop. Rpt.). ALABAMA - Heavy infestations of Unaspis euonymi on euonymus shrubs in Mobile during week ending July 15. (Grimes).

BAGWORM (Thyridopteryx ephemeraeformis) - KANSAS - Still severe in Franklin County. A third hatch occurred about July 12-15. Damaging evergreen and locust trees in Harvey, Cowley, Crawford and Riley Counties. (Thompson, Burkhardt, Peters). OKLAHOMA - Medium to heavy damage to some evergreens over wide area of State. (Okla. Coop. Sur.). TEXAS - A bagworm, probably this species, heavily attacking Chinese elms locally in Hale County. (Massey). INDIANA - Heavy on white pine windbreak in Decatur County. (Schuder). OHIO - On evergreens near Marietta, Washington County. (Stacy).

A CHRYSOMELID (Anomoea laticlavata) - KANSAS - Damaged locust and mimosa trees in Crawford County. (Thompson, Calkins, Peters).

AMERICAN PLUM BORER (Euzophera semifuneralis) - CALIFORNIA - Heavy on sycamore in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

AN ASH BORER (Podosesia syringae) - TEXAS - Attacking ash in Lubbock County. Local heavy infestation in some limbs. (Weigle).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEVADA - Adults laying eggs in Lovelock, Pershing County, and Reno-Sparks, Washoe County. (Bechtel, Snyder; July 22). OKLAHOMA - Populations continue to cause heavy to severe damage to elm foliage over a wide area of State, especially in central and east central sections. Reports indicate that pest now spread to Woodward County in northwest part of State. (Okla. Coop. Sur.). KANSAS - All stages present in Arkansas City and Winfield, Cowley County. Larvae severely damaging elms. This infestation establishes a new record for the county. (Thompson, Calkins, Peters). ALABAMA - All stages present in large numbers in Lee County area. (Guyton). MARYLAND - Heavy on European elm at Severna Park, Anne Arundel County. (U. Md., Ent. Dept.).

EUROPEAN ELM SCALE (Gossyparia spuria) - TEXAS - Causing considerable damage to American elms in Lubbock. (Ashton, Ridgway; July 15). UTAH - Making trees sticky in Logan area; infestations often high. (Knowlton, Thornley). WISCONSIN - Hatching complete in east central area; scale heavy on some trees, July 11-16. (Wis. Coop. Sur.).

LOCUST LEAF MINER (Chalepus dorsalis) - INDIANA - Abundant in Dearborn and Decatur Counties. Many trees are brown. (Schuder).

A LEPIDOPTEROUS LEAF MINER - TEXAS - Attacking pecan foliage. Local heavy infestation in Bexar County. (McGregor).

MIMOSA WEBWORM (Homadaula albizziae) - NEW JERSEY - Activity on mimosa and honeylocust increasing; all stages now present. (Ins.-Dis. Newsl., July 26). INDIANA - Building up in Decatur, Bartholomew, Marion, Boone, Wells and Madison Counties. (Schuder).

SYCAMORE TUSSOCK MOTH (Halisidota harrisii) - INDIANA - Heavy on isolated ornamental shade trees in Bartholomew County. (Schuder).

WALNUT CATERPILLAR (Datana integerrima) - ALABAMA - Infestations in Geneva County. This gives a distribution pattern of the insect across southeast and southwest Alabama during past few weeks. (Grimes).

AZALEA LACE BUG (Stephanitis pyrioides) - ALABAMA - Heavy infestations on azaleas in Lee County area. (Guyton). MARYLAND - Heavy injury to azaleas at University Park, Prince Georges County. (U. Md., Ent. Dept.).

CUTWORMS - ALABAMA - Various species damaged ornamentals in Chilton County. Severe defoliation of plants in some areas. (Helms).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - First-brood activity caused considerable damage in nurseries, and moth flight very heavy. Damage in 1960 expected to be heavier than for many years. (Ins.-Dis. Newsl., July 26).

A LEAFHOPPER (Erythroneura aclys) - INDIANA - Heavy on ornamental redbud at Columbus. (Schuder).

A LEAF ROLLER - ALABAMA - Moderate to heavy damage to camellias and azaleas by a leaf roller (probably Archips sp.) and tree crickets in Mobile County. Early budding camellias severely damaged. (Seibels).

WHITEFLIES - ALABAMA - Undetermined species heavy on azaleas in Lee County area. (Guyton).

#### INSECTS AFFECTING MAN AND ANIMALS

TABANIDS - UTAH - Tabanids extremely numerous in the Linwood-Manilla area of Daggett County on July 11. One species collected there was Apatolestes comastes willistoni. This is a new record for the State. Det. C. B. Philip. (Knowlton).

WISCONSIN - Deer flies most annoying near wooded areas. (Wis. Coop. Sur.). KANSAS - Tabanus sulcifrons and T. atratus numerous around cattle in Riley County. T. sulcifrons numerous in many localities in southeastern and east central Kansas. (Knapp). MISSOURI - T. sulcifrons populations heavy on cattle in central and west central areas. Counts ranged 3-45 flies per animal. (Munson, Thomas, Wood). OKLAHOMA - Populations of several species of horse flies continued heavy in wooded areas throughout eastern half of State. Counts averaged 4 per mature cow in Pushmataha County. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - IOWA - Reported for the first time from Wapello, Keokuk, Washington, Jefferson and Henry Counties (Millspaugh, July 16) and from Guthrie County (Lafoon, July 23). MISSOURI - Collections made in Harrison,

Nodaway and Grundy Counties. Det. C. W. Wingo. (Munson, Thomas, Wood). NORTH CAROLINA - Reported for the first time in State from Ashe, Alleghany and Surry Counties. Populations light (less than 2 per face) in all herds except 1 in northern Ashe County, which had 5-15 per face. Also, easily collected on face of mule. (Farrier).

MOSQUITOES - MARYLAND - Due to heavy rains, increase expected in all areas. Control underway in many localities. (U. Md., Ent. Dept.). DELAWARE - On July 26, Anopheles quadrimaculatus was the most commonly collected mosquito from a single, red artificial resting box at Bombay Hook Refuge, Kent County. (Burbatis, Mason). WISCONSIN - Mosquito populations remaining high in areas which received heavy rain July 2. Increase expected in many localities. (Wis. Coop. Sur.). MINNESOTA - Aedes vexans was the dominant mosquito found in light trap and in larval collections. A total of 49 Culex tarsalis was found in larval collections. (Minn. Ins. Rpt.). OKLAHOMA - Psorophora spp. causing annoyance throughout the eastern half of State. (Okla. Coop. Sur.). UTAH - Generally annoying throughout Cache Valley communities. Troublesome at Bear Lake, Rich County. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - OHIO - Appeared, but not numerous enough to harass cattle in Franklin County. (Holdsworth). OKLAHOMA - Populations continue, with 12-14 per animal on mature cows in Payne County. Causing concern in Oklahoma and McIntosh Counties. (Okla. Coop. Sur.).

HORN FLY (Siphona irritans) - NEW MEXICO - Becoming extremely heavy on range cattle in southern counties; averaged 100-150 per side on cows and 300-400 on bulls in 1 herd in Dona Ana County. (N. M. Coop. Rpt.). OKLAHOMA - Down from previous week on Payne County cattle. Continues to be number one livestock pest in State, especially in eastern half. Counts averaged 500 per mature cow in Pushmataha County. (Okla. Coop. Sur.).

FLIES - WISCONSIN - In 141 barns scattered throughout State, fly populations reported to have increased with advent of higher temperatures. Majority of herds being annoyed by blood-sucking flies. (Wis. Coop. Sur.).

FLEAS (Ctenocephalides spp.) - RHODE ISLAND - Large numbers of adults appearing in basements and yards over State. (Hansen, July 25).

TICKS - CALIFORNIA - Dermacentor occidentalis heavy on a dog in Los Gatos, Santa Clara County. (Cal. Coop. Rpt.). OKLAHOMA - Heavy populations of Amblyomma americanum larvae and nymphs on cattle in wooded areas of Pushmataha County. (Okla. Coop. Sur.).

#### STORED-PRODUCT INSECTS

Stored Grain Insects in Texas - RICE WEEVIL (Sitophilus oryza), FLAT GRAIN BEETLE (Cryptolestes pusillus) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) infesting stored grain sorghum and oats in Atascosa County; heavy surface infestations of all species present in all establishments checked. Medium, widespread infestations of O. surinamensis reported in McLennan County. (Texas Coop. Rpt.).

CADELLE (Tenebroides mauritanicus) - MARYLAND - Active in stored wheat at Lexington Park, Anne Arundel County. (U. Md., Ent. Dept.).

#### BENEFICIAL INSECTS

LADY BEETLES - NEVADA - Various species numerous in fields of alfalfa in Elko, Lincoln, Pershing, Washoe and White Pine Counties. (Nev. Coop. Rpt., July 22). COLORADO - Hippodamia sp. populations on alfalfa in some areas; 500-1,000 per 100 sweeps in Mesa County and 50-100 in Larimer, Weld and Morgan Counties. (Colo. Ins. Sur.). OKLAHOMA - H. convergens ranged 0.5-2 per sweep in alfalfa

throughout State; medium to heavy in some soybeans in southeast and common in grain sorghum in most areas. (Okla. Coop. Sur.). WYOMING - Hippodamia sp. adults averaged 5 and larvae 7 per 25 sweeps in fields of alfalfa sampled in Big Horn Basin and Fremont County. (Fullerton).

MELYRIDS (Collops spp.) - NEVADA - Numerous in most alfalfa checked in Elko, Lincoln, Pershing, Washoe and White Pine Counties. (Nev. Coop. Rpt., July 22). WYOMING - Averaged 5 adults per 25 sweeps in Big Horn Basin and Fremont County alfalfa. (Fullerton).

NABIDS (Nabis spp.) - NEVADA - Numerous in most fields of alfalfa checked in Elko, Lincoln, Pershing, Washoe and White Pine Counties. (Nev. Coop. Rpt., July 22). COLORADO - N. ferus averaged 10-40 per 100 sweeps on alfalfa in Morgan, Weld and Larimer Counties. (Colo. Ins. Sur.). OKLAHOMA - Ranged 0.5-1 per sweep in alfalfa in central area. (Okla. Coop. Sur.). WYOMING - Adults averaged 5 per 25 sweeps in alfalfa in Big Horn Basin and Fremont County. (Fullerton).

LACEWINGS (Chrysopa spp.) - OKLAHOMA - Eggs common in cotton fields; larvae and adults ranged up to 0.5 per sweep in alfalfa in central area. (Okla. Coop. Sur.).

BIG-EYED BUGS (Geocoris spp.) - NEVADA - Numerous in alfalfa checked in Elko, Lincoln, Pershing, Washoe and White Pine Counties. (Nev. Coop. Rpt., July 22).

FLOWER BUGS (Orius spp.) - WYOMING - Adults averaged 3 per 25 sweeps in alfalfa and potato fields sampled in Big Horn Basin. (Fullerton).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - Infestations in MAINE and VERMONT light and scattered. Inspections of airports and environs revealed infestation only at Lebanon Municipal Airport, NEW HAMPSHIRE, where second foliage treatment was applied July 26 around hangars and loading zones. Light to moderate infestations observed in Concord, Dover and Walpole. Beetle population at Otis AFB, Sandwich, MASSACHUSETTS, is heavy. Populations at 20 other airfields in same State ranged negative to light. Infestation at Hillsboro commercial field, RHODE ISLAND, is heavy and remains light at the Navy field at Quonset. Infestations ranged very light to medium at 11 fields inspected in CONNECTICUT. Beetle prevalence in NEW JERSEY area diminished considerably during past week. At points formerly heavily infested, dispersal appears to have accounted for decline. It is anticipated regulatory measures at McGuire AFB, Pomona and Teterboro airports will be discontinued during coming week. Adult flight decreased at Philadelphia International Airport, as well as in North Philadelphia-Norristown-Bristol area, PENNSYLVANIA. Some beetles still flying around loading planes at Philadelphia; precautions continuing. Beetle flight increased from light to medium at Greater Pittsburgh Airport; regulatory precautions continuing. Adult numbers decreased at Erie Airport. Report indicates infestation in Cumberland Valley heavier than in 1959; some farmers report damage to sweet corn. Elsewhere in State infestation is spotty, usually light to medium. (PPC).

Few beetles still flying around hangars at New Castle County Airport, DELAWARE; aerosoling still required. Dover AFB still remains nonhazardous; few beetles present in area remote from parking and loading zones. Numbers much lighter at Friendship Airport, MARYLAND; controls still being carried on. Also light around loading areas at Martin Airport at Essex, with heavier concentrations on outskirts of field; aerosoling of planes leaving area required. Population very light in proximity of loading ramps at Andrews AFB, but heavy infestations still exist around golf course adjoining area; aerosoling still required. No hazard exists at Hagerstown and Frederick airports, nor at Easton and West Ocean City; treatments completely controlled hazard at latter location. Beetles have almost entirely disappeared from Wicomico Airport at Salisbury, Maryland; however,

beetles are fairly numerous and feeding on soybeans in adjacent fields. Emergence reached peak in VIRGINIA during past week; beetles continue heavy in Louisa, Orange, Madison and Culpeper Counties; 35 beetles observed on 1 ear of corn in latter county. Numbers on decline in other counties previously reported heavy. Peak emergence passed in southwest Virginia; few bean fields in Washington County heavily infested and declared hazardous. All airports in State nonhazardous because of regular treatments, except 1 private field at Charlottesville where aerosoling is still required. It is expected that foliage treatments at airports in Norfolk area will be discontinued this week due to decline. National Airport, Washington, D. C., remains nonhazardous. Peak emergence present in WEST VIRGINIA; now considered heavy in Kanawha, Monroe and Summers Counties, which is considerable increase over previous week. Feeding continues heavy in Charles Town, Jefferson County, and Elizabeth, Wirt County. Heavy feeding also reported in Braxton, Brooke, Doddridge, Hampshire, Ritchie, Upshur and Wood Counties. (PPC). Heavy infestations are reported from Ashland County, OHIO. (Polivka).

ASIATIC GARDEN BEETLE (Autoserica castanea) - FLORIDA - Collected in airplane baggage compartments at Miami International Airport, Dade County, July 13 and 14. (Brandt, Creamer). OREGON - Second specimen intercepted at Portland International Airport, week of July 24. All flights originating from infested area being inspected. Det. by P. O. Ritcher. (Capizzi).

ORIENTAL BEETLE (Anomala orientalis) - FLORIDA - Collected in cabin of plane at Miami, Dade County, July 13. (Humphries, Weaver).

A JAPANESE WEEVIL (Calomycterus setarius) - INDIANA - Collected in Bedford, Lawrence County, for a new county record. Det. by Dr. L. E. Chandler. (Matthew, July 15).

LEAD CABLE BORER (Scobicia declivis) - CALIFORNIA - Medium adult infestation in wood of old wine tanks in Redwood City, San Mateo County. (Cal. Coop. Rpt.).

PALE TUSSOCK MOTH (Halisidota tessellaris) - RHODE ISLAND - Adults abundant in light trap in Kingston, July 25. (Hansen).

#### ADDITIONAL NOTES

MAINE - Moderate infestations of POTATO FLEA BEETLE (Epitrix cucumeris) causing moderate damage to tomatoes in Cumberland County. IMPORTED CABBAGEWORM (Pieris rapae) moderate in Cumberland County; damage to cole crops moderate. EUROPEAN RED MITE (Panonychus ulmi) decreasing in untreated checks in Monmouth area. APPLE APHID (Aphis pomi) well below 1959 levels; infestations and damage generally light, but severe infestation reported in Presque Isle area. First-brood CODLING MOTH (Carpocapsa pomonella) adult stragglers still appearing in Cumberland County bait traps; damage light to negligible. Light to moderate infestations of FALL WEBWORM (Hyphantria cunea) in several counties, with damage generally light. FACE FLY (Musca autumnalis) infestations increased in Orono area from 1 per animal on June 25 to about 100 on July 25. (Boulanger).

NEW YORK - EUROPEAN CORN BORER (Pyrausta nubilalis) emerging in substantial numbers in screenhouse in Hudson Valley. Two fresh egg masses found on 100 plants inspected at Poughkeepsie on July 28, but none found at Stone Ridge in similar inspection July 29. Second-brood larvae will probably be detectable in Ulster County August 6-8. Still feeding on untreated corn in Niagara County. CORN FLEA BEETLE (Chaetocnema pulicaria) averaged 2 per plant in knee-high whorl stage corn at Poughkeepsie July 28. CORN EARWORM (Heliothis zea) slowly increased in activity. Moth emergence from overwintering pupae mostly over and emergence from pupae of early July began on July 27 in Hudson Valley. CORN LEAF APHID (Rhopalosiphum maidis) occasional in same area. TOMATO HORNWORM (Protoparce quinquemaculata) numerous on untreated plantings in Nassau County. CABBAGE APHID (Brevicoryne brassicae) and IMPORTED CABBAGEWORM activity evident in many Orleans

County fields. CORN SAP BEETLE (Carpophilus dimidiatus) and CORN EARWORM damage heavy to early corn plantings in same county. TWIG PRUNER (Elaphidion villosum) continues to cause concern to homeowners in Nassau County. Spotted infestations of JAPANESE BEETLE (Popillia japonica) reported in same county; feeding mainly on ornamentals. Bottle trap catches of APPLE MAGGOT (Rhagoletis pomonella) increased sharply in Clinton County. Large numbers of ovipositing females and some male flies found around untreated apple trees; egg laying punctures very evident on untreated apples July 26. Cages in Niagara County continued to show steady emergence of this pest. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) has become more evident in a few locations in Clinton County, due to dry weather. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) hatching in large numbers by July 25 in few badly infested orchards in Niagara County. Some ORIENTAL FRUIT MOTHS (Grapholitha molesta) taken in Niagara County bait traps on July 26 and very few on July 30. (N. Y. Wkly. Rpt.).

VIRGINIA - FACE FLY continues to be a serious problem in northern and western areas. JAPANESE BEETLE causing concern to soybean growers in several eastern counties; causing considerable damage to soybeans interplanted in corn grown for silage. EUROPEAN CORN BORER continues to damage peppers, potatoes and tomatoes; damage to corn appears to be lessening. POTATO LEAFHOPPER (Empoasca fabae) increased to outbreak proportions on Eastern Shore on untreated late potatoes; whole fields were killed outright, but infestation occurred late enough that yield was not appreciably affected. LEAFHOPPERS were quite heavy on beans in some areas of same section, and alfalfa was hit hard. Heavy flights of BLACK CUTWORM (Agrotis ipsilon) and YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) occurred on Eastern Shore during past week. GREEN PEACH APHID (Myzus persicae) reported as heavy on some tobacco in the field. BROWN STINK BUG (Euschistus servus) reported damaging to tobacco in the field in east central tobacco areas and in Patrick County. (Rowell et al.).

NEBRASKA - First-brood EUROPEAN CORN BORER 75 percent pupated in some areas. Second-brood potential is great. Preliminary information indicates first-brood infestation general in Cuming County, with 16 percent pupation. Adult populations of WESTERN CORN ROOTWORM (Diabrotica virgifera) extremely high in many south central fields; heavy damage to corn in infested area evident, following storms. SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi) adults in all corn examined, but not numerous. CORN LEAF APHID infestations continue to increase in milo; only occasional corn plants with heavy infestations. SPOTTED ALFALFA APHID (Therioaphis maculata) low in Dundy and Red Willow Counties. PEA APHID (Macrosiphum pisi) light to moderate (20-100 per sweep) in north central alfalfa. LYGUS BUGS (Lygus spp.), including nymphs, ranged 15-100 per 10 sweeps in central area. STABLE FLY (Stomoxys calcitrans) populations increasing in eastern section; cattle bunching in most areas. HORN FLY (Siphona irritans) ranged 25-200 per side of cattle on sandhills ranges. SPIDER MITES increasing on evergreens in Lincoln County. (Weekman, Hill, Pruess, Roselle).

NEVADA - Heavy infestations of DATE MITE (Oligonychus pratensis) severely damaging 200 acres of timothy in Smith Valley, Lyon County. PEA APHID extremely variable in Lovelock, Pershing County; some fields had only trace numbers, others averaged 300-400 per sweep. Counts per sweep were 20-50 in Douglas County; 40-60 in most fields in Fish Lake Valley, Esmeralda County; and 20-30 in Fallon-Stillwater area, Churchill County. LYGUS BUG populations heavy in most alfalfa in Lovelock; varied from 20-30 to 50-70 per sweep. Counts per sweep averaged 12-25 in Douglas County, 25-50 in Fish Lake Valley and 30-60 in Fallon-Stillwater area. MIGRATORY GRASSHOPPER (Melanoplus bilituratus) averaged 6-10 per sweep in 1 field of alfalfa and 4-6 per square yard in a grainfield in Gardnerville, Douglas County. LADY BEETLES, Geocoris spp., Nabis spp. and Chrysopa spp. were moderate to heavy in most alfalfa checked in Churchill, Douglas, Esmeralda and Pershing Counties. (Bechtel, Lauderdale, Parker, Gallaway).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	Protoparce quinq.	Heliothis zea	Heliothis vires.
<b>ALABAMA</b>								
Auburn 7/29	6					3	251	10
<b>DELAWARE</b>								
Bridgeville 7/15-25					71	9		
<b>ILLINOIS</b>								
Urbana 7/22-28	906	64		176	31			
<b>INDIANA (Counties)</b>								
Lawrence 7/19-26	128	17	11	5	79	58		
Tippecanoe 7/22-28	252	36	5	29	4	5		.1
Vanderburg 7/20-26	227	7	33	7	18			13
<b>IOWA</b>								
Ames 7/15-22	901	160		161				
Ankeny 7/16-22	33	2		6				
Soldier 7/13-20	1,015	509		508				
Milford 7/13-20	718	167		145				
Columbus Jct. 7/13-20	962	216		115				
<b>KANSAS</b>								
Garden City 7/18-25	76	107		7	1	3	3	
Hays 7/21-26	14	8		3			2	
Manhattan 7/21-27	151	31		5		3	3	
Mound Valley 7/20-21, 23,26	52	19				13	6	
Wathena 7/18-20, 22,23-26	170	32		28	3	9		
<b>LOUISIANA</b>								
Baton Rouge 7/22-28	8			99			54	
Franklin 7/25,27	8	2	30		3		18	
Tallulah 7/23-29	2		18				31	10
<b>MISSISSIPPI</b>								
*Stoneville 7/22-28	107	14	231	2	29		122	10
<b>MISSOURI (Counties)</b>								
Scott 7/22-29	11	6		2			50	
Boone 7/22-29	63	12	53			1		
<b>NEW JERSEY</b>								
Sutton 7/21,25	19	13	6		13		1	
Traino 7/21,25	47	19	29		5		24	
<b>SOUTH CAROLINA</b>								
Clemson 7/23-29	44	14	125	3	39	10	49	2
Charleston 7/25-31	3	2	81		11		15	4
<b>TEXAS</b>								
Waco 7/23-29	280	8	103	85			1,732	52

\*Two traps - Stoneville.



LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quing.	Heliothis zea	vires.
<u>WISCONSIN</u>								
*Janesville 7/19-25	391							
Platteville 7/19-22	295	39		10				
Waterford 7/19-25	22							
Middleton 7/19-25	18	34		1				
Arlington 7/19-25	508	67		30				
*Theresa 7/19-25	177							
Oakfield 7/19-25	60					1		
La Crosse 7/19-25	476						6	
Green Bay 7/19-25	16	7						

\*Two traps - Janesville; 3 traps - Theresa.

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WEATHER BUREAU 30-DAY OUTLOOK

AUGUST 1960

The Weather Bureau's 30-day outlook for August calls for cooler and wetter weather than normal in the Great Lakes Region, along the South Atlantic Coast, and in the Pacific Northwest. Warm, dry weather is expected to prevail in the Great Plains and Rocky Mountain areas. In the remainder of the Nation near normal conditions are expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported May 31 by the Plant Quarantine Division, ARS, USDA, are as follows:

A BRUCHID (Bruchus affinis Froel.) in sweetpea in mail from Netherlands on January 12 at Hoboken, New Jersey.

A BRUCHID (Bruchus tristis Boh.) in grass peavine seed in mail from Italy on March 16 at Hoboken; also in peas in stores at New Orleans, Louisiana, on February 15.

A BRUCHID (Bruchus lentis Froel.) in lentils in stores on November 20, 1959, at Wilmington, Delaware.

KHAPRA BEETLE (Trogoderma granarium) 38 times; at Duluth, Minnesota, one time in stores; at Houston, Texas, 10 times (in stores 7 times, in baled crude rubber cargo 3 times); at Charleston, South Carolina, 2 times in cargoes of myrobalan nuts and guar gum; at Wilmington in stores 3 times; at Norfolk, Virginia, one time in stores; at Baltimore, Maryland, one time in stores; at Philadelphia, Pennsylvania, one time in ship's hold; at Cleveland, Ohio, one time in ship's quarters; and at New York, New York, 17 times (in cargoes of baled rubber from Ceylon one time, goat skins from Pakistan one time, cumin and poppy seeds from Iran 3 times, and seedlac, guar gum, gum arabic and gum karaya 12 times from India and the Sudan).

A WEEVIL (Lecriops sp.) in a heavily infested cargo of giant dion (Dion spinulosum) plants from Mexico at Brownsville, Texas, on March 1.

A WEEVIL (Premnotrypes sp.) in potatoes in baggage from Peru at Miami, Florida, on April 10.

A WEEVIL (Palaeopus costicollis Mshll.) in yam in baggage from Jamaica on January 20 at New York.

A PHYCITID (Cryptoblades gnidiella (Mill.)) on orange branch in baggage from Italy on December 21, 1959, at New York.

A PENTATOMID (Eurydema ornatum (L.)) (an important pest of crucifers in Europe, Middle East, and North Africa) on pomegranate in baggage from Israel on September 16, 1959, at New York.

MEXICAN FRUIT FLY (Anastrepha ludens) in fruits in baggage from Mexico at San Ysidro, California, on April 3.

MEDITERRANEAN FRUIT FLY (Ceratitidis capitata (Wied.)) 9 times; at New York 3 times in airplane stores and baggage; at Miami, Florida, one time in fruit in baggage; at Savannah, Georgia, one time in stores; and at Honolulu, Hawaii, 4 times in fruits in baggage destined for the mainland.

WHITE GARDEN SNAIL (Theba pisana Muller) 7 times on cargo from the Mediterranean area; at Charleston one time and at Norfolk 6 times.

A DOCK MOTH (Acronicta rumicis (L.)) (widespread in Europe and Asia infesting a variety of hosts) on cargo of Pyramid Chinese juniper (Juniperus chinensis) plants from Japan on February 25 at Honolulu.

A CERAMBYCID (Callidium rufipenne Motsch.) in baggage from Japan on March 5 at Honolulu.

STATUS OF SOME IMPORTANT INSECTS IN THE UNITED STATES

OMNIVOROUS LEAF TIER (Cnephasia longana (Haw.))

**Economic Importance:** This pest was first found in the United States in strawberries in Clackamas County, Oregon, in 1929. It had been described in 1811 in Europe. A wide range of plant families are attacked. First-instar larvae damage their hosts by mining leaves; later stages feed on flowers, pollen, tender shoots, leaves and fruit. This pest occurs only in the Pacific Coast States and British Columbia on the North American Continent.

**Distribution:** Canada, Europe (including Great Britain) and the United States.

**Hosts:** At least 21 plant families, 37 genera and 49 different species of plants are attacked by this pest. They range from grasses to fruit trees. Legumes are the principal hosts. A few crop plant hosts are as follows: Wheat, asparagus, onions, western hazel, hops, radish, blackberry and strawberry. A great number and variety of weeds are also hosts.

**Life History and Habits:** Adult moths appear, depending on the season, from late May to late June and generally remain active until the middle of July or later. Females mate and start laying eggs in about two days to one week after emergence under insectary conditions. Life of the adult is short, from a few days to nearly 2 weeks. Eggs are deposited singly on rough surfaces (bark of trees, wood shingles, fence posts and sides of buildings), and hatch in 11-20 days. After the egg is deposited, the female brushes its abdomen over the egg several times causing debris and some abdominal scales to adhere to the surface, effectively camouflaging it. The newly hatched larva finds a suitable place, builds a hibernaculum, goes into a quiescent stage and does not begin to feed until the following spring. The larva emerges from hibernation, usually in March, spins down on a short web and allows the wind to blow it to a feeding area close by.

DISTRIBUTION OF OMNIVOROUS LEAF TIER (Cnephasia longana)



If no food is available in the area in which the larva drifts, it dies of starvation. With a suitable host, the larva mines the leaves until the third instar. Grasses and grains generally escape damage. The third instar climbs up the host to the tender growing tip. After finding suitable food, it webs surrounding plant parts together for shelter and protection. Pupation begins about one month after the larva is first noted in the field. Duration of the pupal stage is about two weeks. The life cycle takes about one year for completion.

Description: ADULTS - Male length about 6 mm., wing spread about 18 mm. Forewing, body and head grayish-yellow, hind wings slightly less yellow. Underside of forewings darker than upper side, both sides of rear wing same shade. Anal margin of hind wing from apex to base with fringe of long gray hairs that are about as long as half the width of the hind wing on that portion of the margin close to the base. Apexes of wings somewhat rounded. Front portion of tibia and femur of forelegs washed with brown, with tarsi dark brown. Femur and tibia of middle and hind legs grayish-white, tibial spurs yellowish-gray. Anal tuft fan-shaped and yellowish-gray. Female similar in size and shape to male but differs in color. Forewing grayish with brown markings, the markings varying from a few mottled spots to practically covering the entire wing. PUPA - Length about 6 mm. Abdomen somewhat lighter than rest of body. First six abdominal segments with double row of short spines which are smaller progressing posteriorly. LARVA - Length about 10 mm. Color changes as larva grows; salmon color after hatching and varies from light to dark gray (head capsule and shield very dark) after hibernation. A slight longitudinal stripe appears on each side of the dorsal surface (when 6-9 mm. long), fading as it nears pupation, and turns creamy-brown just prior to pupation. EGG - About 0.5 mm. in diameter with no definite shape and light salmon color. During incubation, it becomes somewhat irregular or collapsed in appearance. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies and the U.S. National Museum). CEIR 10(32):8-5-60.



Male



Female

Adults of Cnephasia longana



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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPERS threatening on large acreages of range and croplands in Quay County, New Mexico; serious problem in agricultural areas of Utah and numerous in areas of Idaho; also serious in areas of the Dakotas, with some damage evident, as well as causing some damage in Wisconsin and Minnesota; locally damaging in areas of Oklahoma. (p. 755). Average number of EUROPEAN CORN BORERS per 100 plants twice as high this year as in 1959 in Illinois; second brood expected to be considerably higher in Iowa than in 1959. (p. 756). FALL ARMYWORM outbreak continues in southern Louisiana; infestations almost epidemic in areas of Alabama and heavy in areas of Georgia. ARMYWORM causing severe leaf-tip injury to rice near Galt, California. (p. 757). CORN LEAF APHID increasing on various crops in several states. (pp. 757, 758). SAP BEETLES numerous in several states. (p. 758). PEA APHID heaviest in many years in areas of Washington and above normal throughout Snake River plains, Idaho; high populations in alfalfa in Montrose and Garfield Counties, Colorado. (p. 759). POTATO LEAFHOPPER abundant in Iowa light trap catches and damaging alfalfa in Washington County, Ohio (p.760), and increasing on potatoes in Weld County, Colorado (p. 764). ALFALFA CATERPILLAR damaged 150 acres of alfalfa in Kings River Valley, Nevada. (p. 774).

ORCHARD MITES continue troublesome in several areas. (pp. 761, 762, 774).

MEXICAN BEAN BEETLE infestation in Idaho remains confined to city of Jerome. (p. 763). IMPORTED CABBAGEWORM heaviest in several years in commercial and home garden cabbage in eastern North Dakota; considerable damage occurring in garden cabbage in Brookings area, South Dakota; increasing on New Jersey cole crops (p. 763); also heavy, with severe damage to cole crops in Cumberland County, Maine (p. 773). COLORADO POTATO BEETLE heavy on potatoes in North Platte, Nebraska. (p. 774).

LARGE ASPEN TORTRIX causing severe defoliation of aspen over large area of Modoc County, California. (p. 768). ELM LEAF BEETLE much more numerous in Idaho than for past 3-4 years, and is damaging in Utah, Oklahoma and Missouri. TWIG PRUNER damaging oaks in Vermont and Massachusetts. (p. 768).

JAPANESE BEETLE activity continues to decrease in many areas; remains hazardous only at a few locations. (p. 773).

ADDITIONAL NOTES. (pp. 773, 774).

INSECT DETECTION: New state records reported were large aspen tortrix in California (p. 768), brown garden snail in Washington (p. 769) and face fly in Nebraska (p. 770). New county records reported included alfalfa weevil in Jackson, Wood, Marshall, Brooke and Wirt Counties, West Virginia (p. 760); elm leaf beetle from Sumner and Chautauqua Counties, Kansas (p. 768), and Humboldt County, Nevada (p. 774); and a Japanese weevil (Calomycterus setarius) in Montgomery County, Maryland (p. 772).

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WEATHER OF THE WEEK ENDING AUGUST 8

Above-normal temperatures prevailed from the southern Plateau to the northern Great Plains, and eastward through the central Mississippi Valley to the southern Appalachians and the middle Atlantic coast. In portions of the southern and central Rockies, mean temperatures were 6° or more above normal. The warmest week of the season so far was also reported in Kansas, Iowa, and Tennessee. Most of the southeastern portion of the Nation remained warm and humid throughout the week. Below-normal temperatures were general from the northern Rockies into the central Plateau and much of the Pacific Northwest, and from the central Great Lakes region to northern New England. Near-normal temperatures prevailed along the Gulf coast.

Dry weather dominated most areas of the western half of the country, except the northern Rockies, where general weekend showers brought 1/2 to 2 inches of precipitation and local areas of the Rockies and Plateau regions also received some light thundershower rainfall. The fire hazard remained high in most forest areas of the Western States. Generally dry conditions also extended into the southern Great Plains, where a large area from southeastern New Mexico to southwestern Arkansas reported a virtual absence of rain. Scattered frontal and air mass showers and thunderstorms, some with locally high winds and hail, were dotted across most sections from the eastern Great Plains and lower Mississippi Valley eastward.

The usual hit and miss shower pattern left varied and highly localized rainfall, bringing 2 to 4 inches or more in widely scattered areas of the northern Great Plains, the central Mississippi and upper Ohio Valleys, the Middle and South Atlantic States, and eastern portions of the Gulf Coast States, while neighboring but less favored sections were left with only light amounts. Heavy rainfall in short periods of time were reported from Richmond, Virginia, where over 3-1/2 inches fell in a small western section of the City, and at Largo, Florida, where over 4-1/2 inches was recorded, both in less than 1 hour on Saturday, August 6. Hail and high winds produced locally severe damage in several states. In Iowa, crop damage was preliminarily estimated at one million dollars and property damage at two hundred thousand dollars in Audubon County on the 6th. Severe hailstorms were reported in southwestern South Dakota, also on the 6th. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - NEW MEXICO - Unspecified species heavy in spots on crop and rangeland in Taos and Torrance Counties; threatening infestation on 45,000 acres of rangeland and 62,000 acres of cropland in Quay County. In eastern area, where rainfall has been abundant, a fungus has been attacking grasshoppers and caused an estimated 50 percent reduction in populations in many areas. Adult survey completed in 7 counties. (N. M. Coop. Rpt.). UTAH - Unspecified species moving into alfalfa in some Box Elder and Weber County fields from rangelands; a serious problem in agricultural fields, berry patches and home gardens over much of Salt Lake County. (Knowlton). IDAHO - Populations of various species ranged 25-75 per square yard on few spots of less than 10 acres in Lemhi County; approximately 6,000 acres in Hayden Creek-Basin Creek-Baldy Basin area infested; averaged 15-25 per square yard on 200-500 acres on Goertzen Creek drainage. Populations in Camas County decreased 5-10 per square yard in volunteer wheat; dispersed into adjacent wheat fields and along adjacent roadsides. Averaged 10-15 per square yard on 3,000 acres of conservation reserve land. Checks in high prairie area along Elmore-Camas County line showed approximately 2,000 acres of mountain meadow infested. Grasshoppers have moved from dry range area to green vegetative covering adjacent to Horseshoe Bend grade and onto alfalfa, with one field having up to 100 adults per square yard and complete defoliation of alfalfa. Populations of several species averaged 15-25 per square yard on conservation reserve fields in Washington County. Grasshoppers averaged 18-20 per square yard north of Lewiston, while areas around Lapwai averaged 10 per square yard. Infestation averaged 10 per square yard along Clearwater River in vicinity of Myrtle, Nez Perce County. Infestation appears light in Lewis County. (Evans). WASHINGTON - Infested area includes southwest Whitman, northeast Franklin, northern Walla Walla Counties and northern portions of Garfield and Columbia Counties; economic infestations in several other eastern counties. Principal species is Melanoplus bilituratus, with some M. bivittatus and Oedaleonotus enigma. (Busdicker).

NORTH DAKOTA - Controls have been applied to 3,700 acres of rangeland in Slope, Golden Valley and McKenzie Counties. (N. D. Ins. Sur.). SOUTH DAKOTA - Infestation generally quite spotted, but becoming serious in certain favorable locations. In central area, Melanoplus bivittatus dominant and 90 percent adults; M. differentialis 50 percent adults; M. bilituratus ranged fourth instar to adults, being 50 percent in latter stage; M. femur-rubrum ranged second instar to 10 percent adults. (Burge). Damage to flax and marginal damage to corn noted in east central and north central areas. Occasional field of small grain shows damage by cutting off of heads. (Mast). MINNESOTA - Situation much the same as last week, but additional infestations are reported from Swift and Chippewa Counties. Damage to margins of corn and soybeans quite common; dry weather and roadside cutting have forced grasshoppers congregated in ditches to move into cropland. Damage to adjacent crops, although severe in some cases, is restricted to a few rows. (Minn. Ins. Rpt.). WISCONSIN - A significant percentage of alfalfa fields in Marquette, Waushara, Waupaca, Marinette, Shawano, Pepin and Oconto Counties have high populations. Counts averaged more than 15 per square yard in 12 of 15 Marquette County alfalfa fields, 17 of 34 fields in Waupaca County and 8 of 23 Waushara County fields. One field of alfalfa in Marinette County averaged 60 per square yard, with damage very evident. (Wis. Coop. Sur.). IOWA - Averaged 3-5 per square yard in alfalfa and fencerows at Kanaawa Experimental Farm July 29; ranged from newly hatched to over half-grown, with Melanoplus differentialis dominant followed by M. femur-rubrum. (Iowa Ins. Inf.). OKLAHOMA - Several species damaging various crops in localized areas of Bryan, Cotton, Alfalfa and Woods Counties. (Okla. Coop. Sur.). MISSOURI - An unspecified species defoliated 75-95 percent of a field of alfalfa in Henry County. (Barry). INDIANA - An unspecified species moving out of cut hay fields into beans in Jay County; treatments required. (Everly). VERMONT - Unspecified species numerous in alfalfa. (MacCollom, Aug. 1).

MORMON CRICKET (Anabrus simplex) - IDAHO - Scattered over approximately 4,000 acres in Burnt Wagon Basin area; third to seventh-instar nymphs range from occasional up to 5 per square yard. (Evans).



3 had 20 percent tip damage. (U. Md., Ent. Dept.). DELAWARE - Young larvae increasing in ears of corn in all counties; heaviest infestation in Sussex County. (Burbutis, Mason).

FALL ARMYWORM (Laphygma frugiperda) - MARYLAND - First infestations of season, generally light and spotty, noted in several fields of late corn in Frederick County. (U. Md., Ent. Dept.). GEORGIA - Moderate on Coastal Bermuda grass in Cook County and heavy on same host in Grady, Dougherty and Bulloch Counties. Heavy on millet in Madison and Jones Counties; some fields have 20 larvae per square foot. Heavy on lawns in Colquitt, De Kalb and Clarke Counties. (Powell, Daniell, Oglesby, Johnson). ALABAMA - Infestations almost epidemic in many areas, being extremely heavy in Talladega, Shelby, Butler, Camden and Elmore Counties. Causing tremendous damage to grain sorghum, millet and pasture grasses in these areas. (Grimes). LOUISIANA - Larvae reported from most of southern half of State, being heavy in most cases; 69 per 10 sweeps collected in untreated millet in Washington Parish. Heavy infestations reported last week on sweetpotatoes and adjacent grass in Acadia and St. Landry Parishes reduced by insecticidal treatments. Very heavy in grass pastures in Livingston, Franklin and West Carroll Parishes; larvae appearing in late sorghum in Tensas Parish. Causing considerable damage to sugarcane in some areas of East Baton Rouge Parish. (Spink). OKLAHOMA - Damaging infestations noted in fields of corn in Stillwater area. (Okla. Coop. Sur.). KANSAS - Infesting corn in Pawnee County. (Burkhardt).

ARMYWORM (Pseudaletia unipuncta) - CALIFORNIA - Heavy locally east of Galt, Sacramento County, causing severe leaf tip injury to rice ready to head. (W. Golden). WYOMING - Lightly damaging oats and barley in Big Horn County. (Eckardt). MINNESOTA - Scattered infestations reported from Blue Earth, Redwood and Kandiyohi Counties; heavy damage in some fields. (Minn. Ins. Rpt.).

ARMYWORMS - IOWA - Unspecified species feeding on 25 percent of whorls of replant corn in Mahaska County and on grasses in mowed alfalfa in Lyon County. (Iowa Ins. Inf., Aug. 1). NORTH DAKOTA - Damaging infestations of unspecified species in oats near Bismark, Burleigh County, and in corn near Killdeer, Dunn County. (N. D. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Damaging late grain sorghum in Woodward, Payne and Tulsa Counties. (Okla. Coop. Sur.). LOUISIANA - Larvae causing considerable damage to late soybeans and sorghum in Tensas Parish; damage continues to soybeans in East Baton Rouge Parish despite treatments. (Spink). ALABAMA - Continues active on corn, field peas and soybeans; however, infestations decreased in most areas. (Grimes).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - More numerous, 4-25 per head, in grain sorghum checked in Marshall and Bryan Counties; occasional larva noted in field checked in Bixby area. (Okla. Coop. Sur.). TEXAS - Medium, widespread infestations on grain sorghum in Washington and Austin Counties (McClung) and in Zavala County (Prucia); ranged 4-20 per 5 heads in Burleson County (Randolph).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Heavy on grain sorghum in some areas of Burleson County, in Brazos River bottom. (Randolph).

CORN LEAF APHID (Rhopalosiphum maidis) - DELAWARE - Colonies increasing in size on Sussex County corn. (Burbutis, Mason). MARYLAND - Numbers increasing in tassels and whorls of corn in all sections. (U. Md., Ent. Dept.). OHIO - Early field corn practically aphid free in north central counties where this species has been unusually abundant for past 3 years; winged adults appearing in later corn with tassels still in plant whorl. Check of 5 fields in Ottawa County disclosed very few aphids. Infestation low in all fields checked in Washington County; parasites and predators numerous. (Triplehorn, Grimm, Blair; July 29). INDIANA - Abundant in Wayne County, but not as heavy as in 1959. (Everly). IOWA - Ranged from 0 to over 1,000 on corn tassels. (Iowa Ins. Inf., Aug. 1). WISCONSIN - Infestations ranged 80-90 percent in corn in Green, Grant, Lafayette, Crawford, Vernon and La Crosse Counties. Populations in tassels and whorls ranged from 2-3 aphids per

plant to several hundred. Predators generally scarce. (Wis. Coop. Sur.). MINNESOTA - High populations reported in some Roseau County late barley; majority of barley maturing and harvest well underway in northwest. (Minn. Ins. Rpt.). SOUTH DAKOTA - Numbers increasing on corn in eastern area; damage unknown. (Mast). UTAH - Infesting a field of late barley in Weber County. (Knowlton). IDAHO - Infestations found in field of barley near Caldwell, Canyon County. (Bechtolt, July 29). NEW MEXICO - Generally heavy on sorghums, corn, Sudan and Johnson grass in Quay County. (N. M. Coop. Rpt.).

CHINCH BUGS (*Blissus* spp.) - TEXAS - *B. leucopterus* light to medium on corn in Caldwell County; no damage expected as corn is fast reaching maturity. (Massey). LOUISIANA - Many St. Augustine grass lawns in Baton Rouge and other areas of State completely destroyed by *B. leucopterus insularis* this year. (Spink). INDIANA - *B. leucopterus* reported to have moved from harvested wheat to first 20 rows of adjacent corn in Jasper County, July 15. (Gould). NEW JERSEY - *B. leucopterus hirtus* causing severe lawn damage in some northern counties. (Ins.-Dis. Newsl., Aug. 2).

CORN ROOTWORMS (*Diabrotica* spp.) - INDIANA - *D. longicornis* abundant in some corn in Jasper County; adults averaged 4-5 per ear; feeding on silks. (Gould). WISCONSIN - *Diabrotica* spp. adults more common in many sections; feeding on silks or in tassels; *D. longicornis* most common in Green, Grant and Lafayette Counties and *D. undecimpunctata howardi* in Crawford, Vernon and La Crosse Counties. (Wis. Coop. Sur.). SOUTH DAKOTA - *Diabrotica* spp. damaging in many areas. (Mast). KANSAS - *D. longicornis* and *D. virgifera* caused lodging of corn in Riley, Pottawatomie and Osborne Counties; averaged 5 larvae per plant in Osborne County. ; Adults emerged in Riley and Pottawatomie Counties. (Burkhardt, Gates, Peters). WYOMING - *D. virgifera* adults feeding on corn tassels in Platte County. (Lander).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - OKLAHOMA - Ranged 1-5 per plant in fields of grain sorghum checked in Payne County. (Okla. Coop. Sur.). MARYLAND - Apparently at peak; ranged 15-25 per plant on late field corn in Frederick County. (U. Md., Ent. Dept.).

SAP BEETLES - DELAWARE - *Carpophilus lugubris* adults continue to increase; larvae in ears of corn in all counties, with some feeding injury. (Burbutis, Mason). MARYLAND - Principally *C. lugubris*, abundant in maturing ears of sweet corn in all sections. (U. Md., Ent. Dept.). OHIO - *Glioschrochilus* spp. unusually abundant throughout State; currently most conspicuous insects in corn; congregating in tunnels of European corn borer and corn earworm and in tassels, particularly those injured by other species. (Triplehorn, July 29). MICHIGAN - Unspecified species generally abundant at Perry, East Lansing, Grand Rapids, Sparta, Benton Harbor and South Haven. (Hutson, Aug. 2). UTAH - *C. lugubris* infesting sweet corn in several parts of Salt Lake County; some infested ears have no corn earworm infestation. (Knowlton). WASHINGTON - Severe damage, apparently by *C. lugubris*, occurring to corn in Yakima Valley; eggs being deposited in ears of sweet corn and larvae feeding on kernels previously infested with corn earworm. One lot of 70 tons of sweet corn dumped because of infestation. Of 40 fields inspected, 30 percent were infested. (Turney, Landis).

WEEVILS - TEXAS - *Anacetrinus deplanatus* widespread on grain sorghum in Jones County. (Texas Coop. Rpt.). IDAHO - Immature stages of unspecified species boring into crown and lower nodes of barnyardgrass (*Echinochloa crusgalli*); many small side shoots completely destroyed. (Scott, Waters; July 29).

SPIDER MITES (*Tetranychus* spp.) - WASHINGTON - *Tetranychus telarius* light to moderate on corn. (Landis). UTAH - *T. telarius* damaging occasional fields and patches of sweet corn in Provo-Orem and Spanish Fork areas, Utah County, and at Magna and Granger, Salt Lake County. (Knowlton). COLORADO - High populations of *T. telarius* in some fields of corn in Weld, Boulder and Larimer Counties; moderate damage on lower 6 leaves. Damage severe in 1 field in Otero County, with mites on leaves up to tassel. Slight damage on lower leaves in Garfield County. (Colo. Ins. Sur.). ARIZONA - *T. cinnabarinus* heavy and damaging alfalfa grown for seed

in Yuma County. (Ariz. Coop. Sur.). DELAWARE - T. atlanticus building up on soybeans in Kent and Sussex County, particularly in latter county. (Burbutis, Mason). GEORGIA - T. telarius light to moderate on peanuts in Taylor County. (Alden).

PEA APHID (Macrosiphum pisi) - WASHINGTON - Heaviest in many years on second-cutting alfalfa and alfalfa grown for seed at Brownstown, Yakima County, and Othello, Adams County. (Landis). OREGON - Populations require control in Nyssa-Adrian area, Malheur County. (Stephen). IDAHO - Above normal throughout Snake River plains; continues to increase in alfalfa where predator numbers are low. (Foote et al., July 29). Continues excessively abundant throughout southwest and south central areas. (Gittins). Populations quite low in fields of irrigated alfalfa in Lapwai area; no more than 1 per sweep. Predator populations generally high. (Manis). UTAH - Population dropped conspicuously during past 10 days in many Salt Lake and Utah County alfalfa fields. (Knowlton). WYOMING - Averaged 15 per sweep in alfalfa sampled in Goshen and Laramie Counties. (Fullerton). COLORADO - Hot weather and cutting of alfalfa reduced populations in most areas; ranged 100-150 per 100 sweeps in Otero, 50-100 in Boulder and Larimer and 200-300 in Mesa Counties. High populations, 20,000-30,000 per 100 sweeps, in alfalfa in Montrose and Garfield Counties. (Colo. Ins. Sur.). MISSOURI - Ranged 2-65 per sweep in northeast and east central areas; highest on alfalfa ready to cut for hay. (Munson, Thomas, Wood). MINNESOTA - Counts remain low in south central, southwest, southeast and west central districts; averaged 0-30 per 10 sweeps. (Minn. Ins. Rpt.). WISCONSIN - Ranged 0.5-5.0 per sweep in alfalfa in Green, Grant, Lafayette, Crawford and Vernon Counties. (Wis. Coop. Sur.). MARYLAND - Increased slightly on alfalfa in central sections; ranged 10-100 per sweep in 19 fields surveyed. (U. Md., Ent. Dept.). DELAWARE - Averaged 10 per sweep in field of alfalfa in New Castle County and one in Kent County. (Burbutis, Mason).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations now low in Yuma County and in most central and southeast area fields; damage during July buildup was heavy in many areas, with 50-70 percent loss common in fields planted to susceptible varieties. (Ariz. Coop. Sur.). COLORADO - Counts per 100 sweeps in alfalfa ranged 0-20 in Otero, 0-60 in Larimer and 0-30 in Boulder Counties. A high population could build up due to prevailing weather conditions. (Colo. Ins. Sur.). OKLAHOMA - Very light throughout eastern half of State, 0-1 per sweep in most fields checked; averaged 5 per sweep in 1 field of alfalfa in Johnston County. Localized infestations noted in some central counties. (Okla. Coop. Sur.). MISSOURI - Increasing in southern section, particularly in southwest where counts ranged from 0 to as high as 130 per sweep. Averaged 5.6 per sweep on Sikeston experiment station in southeast. No damage evident. (Barry, Fairchild).

CLOVER APHID (Anuraphis bakeri) - IDAHO - Common on red clover in southwest; occasionally 50-500 per stem. (Waters, July 29).

LYGUS BUGS (Lygus spp.) - IDAHO - Populations in alfalfa vary from low in treated fields to a high of 20 per sweep in untreated fields. (Waters, July 29). Excessively abundant in alfalfa in Moscow area; one-half cup of adults and nymphs taken in 10 sweeps in 1 field. Populations so heavy that every flower bud in field has been blasted. (Priest, Gittins). UTAH - Averaged 2-4 adults and 1-3 nymphs per sweep in several Salt Lake and Utah County alfalfa fields. (Knowlton). WYOMING - Averaged 7 adults and 5 nymphs per 100 sweeps in alfalfa sampled in Goshen and Laramie Counties. (Fullerton). ARIZONA - Averaged 20-100 per 10 sweeps in alfalfa statewide. (Ariz. Coop. Sur.). MARYLAND - L. lineolaris adults and nymphs common in alfalfa and red clover in central sections. (U. Md., Ent. Dept.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Populations increased in Green, Grant, Lafayette, Crawford and Vernon Counties, where adults and nymphs ranged 3.4-8.8 per 10 sweeps. (Wis. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - MARYLAND - Adults common in fields of alfalfa from Frederick to Garrett Counties. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Highest count in alfalfa was 1 per sweep in southwestern counties. Marked increase appears to have occurred July 21-27; Dane County fields averaged 9 per 100 sweeps on July 21, but 37-50 per 100 sweeps on July 27. Nymphs now common. (Wis. Coop. Sur.). IOWA - Abundant at light traps, 700-900 per night, and around lights in homes; however, averaged less than 1 per sweep in alfalfa. (Iowa Ins. Inf., Aug. 1). OHIO - Damaging third-growth alfalfa in all fields checked in Washington County, July 29, but not in Franklin County, although present up to 1 per sweep August 4. (Blair). MARYLAND - Ranged 2-20 per sweep on alfalfa in central sections. (U. Md., Ent. Dept.). VERMONT - Nymphs building up in alfalfa. (MacCollom, Aug. 1).

LEAFHOPPERS - NEW JERSEY - Unspecified species numerous per sweep on alfalfa in a number of fields. (Ins.-Dis. Newsl., Aug. 2). CALIFORNIA - Adults of Draeculacephala minerva medium on corn leaves in Potter Valley plantings, Mendocino County. (Cal. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - LOUISIANA - Averaged 33 per 100 sweeps (ranged 16-51) in 3 fields of soybeans in St. Landry Parish. (Spink). TEXAS - Averaged 10-12 per 5 sweeps in Burleson County alfalfa. (Randolph).

ALFALFA WEEVIL (Hypera postica) - WEST VIRGINIA - Second annual survey revealed Jackson, Wood, Marshall, Brooke and Wirt Counties infested for the first time. (W. Va. Ins. Sur.). MARYLAND - Adults light in alfalfa in Frederick County. (U. Md., Ent. Dept.).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - IDAHO - Larvae remain abundant in some red clover fields; average over 1 per stem. (Waters, July 29).

CLOVER ROOT CURCULIO (Sitona hispidula) - WISCONSIN - Averaged 6 per 10 sweeps in Green, Grant, Lafayette, Crawford and Vernon Counties. (Wis. Coop. Sur.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - LOUISIANA - Ranged 48-56 (averaged 52) per 100 sweeps in 3 fields of soybeans in St. Landry Parish. (Spink).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - COLORADO - Populations reduced in Larimer County alfalfa; 10-30 per 100 sweeps. (Colo. Ins. Sur.). WYOMING - Averaged 6 larvae per 100 sweeps in each of 12 fields of alfalfa in Goshen and Laramie Counties. (Fullerton). SOUTH DAKOTA - Adults present in most fields of alfalfa; averaged 1 larva per 10 sweeps on same crop in southeast and east central areas. (Mast). WISCONSIN - Larvae averaged 2.4 per 10 sweeps in alfalfa in Green, Grant, Lafayette, Crawford and Vernon Counties. (Wis. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Averaged 1 larva per sweep in alfalfa in New Castle and Kent Counties, and 3 per 10 sweeps in soybeans throughout State. (Burbutis, Mason). MARYLAND - Moderate larval populations appearing in alfalfa in Frederick County. (U. Md., Ent. Dept.).

CUTWORMS - UTAH - Peridroma saucia numerous in alfalfa in Junction-Kingston, Piute County. (Knowlton). NEW MEXICO - Heavy larval populations of P. saucia and Chorizagrotis auxiliaris damaging gardens and lawns at Tucumcari, Quay County. (N. M. Coop. Rpt.). ALABAMA - Feltia subterranea extremely heavy on peanuts in southeastern section. (Eden). This is the unspecified species that has been reported on peanuts for the past several weeks. (Gaines).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy and causing severe damage to alfalfa in Natoma area, Sacramento County. (Cal. Coop. Rpt.).

WEBWORMS - OKLAHOMA - Loxostege sp. building up in alfalfa throughout east central area; averaged 1-2 per sweep in most fields surveyed. Lighter in southeast and south central areas. (Okla. Coop. Sur.). ARIZONA - Loxostege similalis light, 1 per 50 terminals, in southwest and central area alfalfa. (Ariz. Coop. Sur.).



## FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NORTH DAKOTA - Trace infestations reported in apple at Fargo, Cass County. (N. D. Ins. Sur.). WISCONSIN - Moderate populations ranged fifth instar to adult in apple orchards in Door County, July 29. (Wis. Coop. Sur.). MICHIGAN - Scattered adult emergence began in cages at Grand Rapids, July 17; no peak apparent July 27. (Hutson). ILLINOIS - No activity in Carbondale area; second-generation larvae maturing. (Meyer, Aug. 3). MISSOURI - Populations appear very low; however, full-grown larvae and new entries found in some apples in orchard near Columbia. Third brood should be light. (Wkly. Rpt. Fr. Gr., Aug. 3). INDIANA - First-brood moths still coming to bait traps in Vincennes area, though peak activity has passed. (Hamilton, Aug. 1). OHIO - Cage emergence heavy July 23-27. (Cutright). NEW JERSEY - Not a particular problem where adequate controls applied; few orchards with fresh stings. (Ins.-Dis. Newsl., Aug. 2).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - VERMONT - First-brood adults now laying eggs; second-brood larvae due next week. (MacCollom, Aug. 1). MASSACHUSETTS - Egg laying and hatching has been rapid during past week. (Crop Pest Cont. Mess.). OHIO - First and second instars feeding July 20-25, but not numerous July 29. (Cutright). WISCONSIN - Moderate to heavy in Door County apples; adults, eggs and first-instar larvae present, July 29. (Wis. Coop. Sur.).

JAPANESE BEETLE (Popillia japonica) - OHIO - Adults so abundant in Wayne County area that early maturing apple and peach fruits in commercial orchards have been attacked; some fruits entirely consumed. (Rings).

APPLE MAGGOT (Rhagoletis pomonella) - MASSACHUSETTS - Flies abundant and ovipositing in blueberry fields in Plymouth and Barnstable Counties. (Tomlinson, July 22). Adults easily seen in many orchards. (Crop Pest Cont. Mess.). OHIO - Large catches on stickyboard traps continue. (Cutright, July 29). WISCONSIN - Light to moderate populations laying eggs in Door County, July 29. (Wis. Coop. Sur.). MINNESOTA - Adults remain active. (Minn. Ins. Rpt.).

SAN JOSE SCALE (Aspidiotus perniciosus) - NEW MEXICO - Becoming extremely heavy in many apple orchards in Rio Arriba and Sandoval Counties. (N. M. Coop. Rpt.).

GRAPE MEALYBUG (Pseudococcus maritimus) - OREGON - Infestation of single block of pears and bordering vegetation in Jackson County, reported in CEIR 10(17):310, considerably reduced from 1959; egg deposition now underway. (Gentner).

PEAR-SLUG (Caliroa cerasi) - UTAH - Severely damaged untreated pears, cherries and flowering hawthorne at Logan and other localities in Cache County. Injury increased in Davis and Salt Lake Counties. (Knowlton). OREGON - Caused severe injury to cherry foliage in backyard plantings in Redmond, Deschutes County. (Koontz, Ritcher).

ORCHARD MITES - NEW JERSEY - Mites, particularly Panonychus ulmi, building up rapidly; heavy in some orchards. (Ins.-Dis. Newsl., Aug. 2). INDIANA - Mites exhibiting tremendous pressure in Orleans area to bronze apple foliage in spite of treatments. (Marshall, Aug. 2). Conditions in Vincennes area continued favorable for activity of all species in apple and peach orchards. However, counts show growers have properly applied recommended controls at proper time. Foliage on apples from Vincennes southward is more succulent and freer of mite injury than usual for this time of year. (Hamilton, Aug. 1). ILLINOIS - In Carbondale area, P. ulmi populations will tend to decrease during next month; Tetranychus canadensis not as high nor in as many orchards as at same time in 1959; small population continues to be a threat. T. telarius populations present in orchard floors will be driven into trees as heat dries host plants. (Meyer, Aug. 3). MISSOURI - T. telarius remains troublesome in central area, although

most growers have eliminated infestations. In southeast, P. ulmi still causing bronzing, mostly on apples, but also on some peaches. (Wkly. Rpt. Fr. Gr., Aug. 3). NORTH DAKOTA - P. ulmi moderate on apples at Fargo, Cass County. (N. D. Ins. Sur.). COLORADO - T. telarius building up on cover crops and moving to fruit trees in Mesa and Delta Counties; building up on cover crops in Garfield County. (Colo. Ins. Sur.). UTAH - P. ulmi damaging apple orchard at Orem, Utah County. (Knowlton, Barlow). Damage by Tetranychus spp. often conspicuous in uncared for and poorly treated apple and pear orchards in Salt Lake and Utah Counties. Discoloration of apple trees moderate in Garden City area, Rich County. (Knowlton). NEW MEXICO - Aculus fockeui damaging prune foliage in orchards at Los Luceros, Rio Arriba County; an unspecified species of blister mite damaged apple foliage in Chimayo area orchards in same county. Light to heavy infestations of T. mcdanieli on apple foliage in Rio Arriba, Sandoval and Bernalillo Counties and Bryobia rubrioculus damaging same host in Valencia, Bernalillo, Sandoval, Taos and Rio Arriba Counties. (N. M. Coop. Rpt.). CALIFORNIA - T. pacificus heavy on peach in Littlerock, Los Angeles County. (Cal. Coop. Rpt.). OREGON - T. telarius building up in Jackson County pear orchards; some defoliation and considerable blackening of foliage observed in late July. (Gentner).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - ILLINOIS - New larval entries and small larvae found in twigs in Calhoun County, July 28. (Meyer). MISSOURI - New entries found in succulent terminals in an untreated orchard near Columbia; partly grown larvae present in ripe fruit. (Wkly. Rpt. Fr. Gr.). INDIANA - Adult trap captures high in Knox County area July 29-31. (Hamilton, Aug. 1).

PEACH TWIG BORER (Anarsia lineatella) - OREGON - Abundant in twigs and peaches in experimental orchard at Milton-Freewater, Umatilla County. (Koontz, Ritcher).

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - OREGON - Caused severe injury to young prune orchard near Milton-Freewater, Umatilla County; adults emerging August 3, but many live pupae also found. (Koontz, Ritcher).

THRIPS - NEW MEXICO - Extremely heavy infestations of unspecified species curling peach foliage in Rio Arriba County orchards. (N. M. Coop. Rpt.).

WESTERN CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - IDAHO - Adults in cherry trees in Moscow July 28. (Portman).

FALL WEBWORM (Hyphantria cunea) - OREGON - Extremely abundant in western portion of State; as many as 25 tents per walnut tree observed in Salem area; averaged 2-4 tents per tree in commercial fruit and nut orchards checked in Clackamas and Marion Counties. (Capizzi).

WALNUT CATERPILLAR (Datana integerrima) - ILLINOIS - Defoliation of walnut trees in northern half of State becoming very noticeable. (Ill. Ins. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Check of 2 pecan groves in Marshall County showed 3 and 20 percent of nuts with fresh entries; damaging infestations also reported in Seminole County. (Okla. Coop. Sur.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Numerous in Jefferson County, but only occasional adult noted in pecan grove checked in Wagoner County. (Okla. Coop. Sur.).

A FILBERT APHID (Myzocallis coryli) - OREGON - Began building up in Willamette Valley filbert orchards in late July; some controls reported August 5. (Stephenson).

Citrus Insect Situation in Florida - End of July - PURPLE SCALE (Lepidosaphes beckii) activity decreasing and populations will be at or below current low level during August and September. Summer peak of FLORIDA RED SCALE (Chrysomphalus aonidum) reached last week. Populations now at high level but will decline somewhat during August. Although 80 percent are presently in young stages, they are maturing rapidly. Highest activity is in Bartow, upper east coast, Indian River,

Ridge and Orlando districts. CITRUS RED MITE (Panonychus citri) activity decreasing, will continue downward during August. Although statewide population is not unusually high, it is above average for this time of year. Activity highest in Orlando, Brooksville and Ridge districts. CITRUS RUST MITE (Phyllocoptruta oleivora) activity will increase until mid-August, then decrease. Populations will peak in August near average level, but infestations not expected to decline markedly until mid-September. Highest activity is in Bartow, upper east coast, Ridge, west coast, Indian River and Orlando districts. TEXAS CITRUS MITE (Eutetranychus banksi) is more abundant than in previous years; sharp decrease expected during August. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

#### TRUCK CROP INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - IDAHO - The first part of the eradication program has been completed at Jerome. Extensive surveys indicate that outbreak is still confined to that city. (Priest, Gittins). UTAH - Damage increasing in some northern localities. Damage severe in Salt Lake County home gardens. (Knowlton). WYOMING - Larvae averaged 4 per 100 plants in bean fields in Goshen and Laramie Counties. (Fullerton). COLORADO - Light populations in fields treated once in Montrose County. Some larvae and pupae in Weld County. Counts of 10-15 larvae per 10 bean plants near Rocky Ford, Otero County; little damage found in other areas of county. (Colo. Ins. Sur.). MICHIGAN - Infestations spotted; pupae found at Stanton, Lansing and Saginaw, July 27. (Hutson). MARYLAND - Very destructive to lima and snap beans in gardens over State. (U. Md., Ent. Dept.).

LYGUS BUGS (Lygus spp.) - IDAHO - Ranged 3-8 per sweep on lima beans south of Nampa, Canyon County. (Waters, July 29).

PEA MOTH (Laspeyresia nigricana) - WASHINGTON - Much heavier infestation in garden peas at Sumner than previously. Of 500 pods examined, 78 infested. This is a 15 percent infestation as compared with about 1 percent normally. (Doucette).

PEA APHID (Macrosiphum pisi) - IDAHO - Populations very high on beans in Snake River plains; alates swarming in bean fields; colonizing on plants in some cases. (Foote et al., July 29). Large numbers of alates forced over onto crops other than alfalfa and peas because of general haying operations. Particularly abundant on beans, but little colonizing occurred on this crop. (Gittins). WISCONSIN - Aphids have not rebuilt their populations which dropped drastically following storms in July. Little, if any treatment, planned before harvesting about August 12. (Wis. Coop. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - OREGON - Large flights in Jackson County, beginning in mid-July. Oviposition on crucifers late in the month. (Gentner). NORTH DAKOTA - Heaviest infestation in several years in commercial and home garden cabbage plantings in eastern section. (N. D. Ins. Sur.). SOUTH DAKOTA - Considerable damage to cabbage in gardens in Brookings area. (Mast). NEW JERSEY - Increasing on cole crops. (Ins.-Dis. Newsl., Aug. 2).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Heavy injury to young cabbage plants in New Castle County. Eggs common on cabbage and adults present on lima beans in Kent County. (Burbutis; Mason). COLORADO - At Rocky Ford, Otero County, 81 in light trap and 16 at Greeley, Weld County, during the week. (Colo. Ins. Sur.).

THREE-LINED POTATO BEETLE (Lema trilineata) - RHODE ISLAND - First-generation adults severely damaging potato foliage in University plots at Kingston. (Kerr, Aug. 1).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Continues to be trapped in high numbers per week: Rocky Ford, Otero County, 2,305; Longmont, Boulder County, 2,006; New Liberty, Mesa County, 1,097. At Greeley, Weld County, 224 captured one night. Averaged 30 per 100 sweeps in Weld County. (Colo. Ins. Sur.). NORTH DAKOTA - Populations extremely light in potatoes through Red River Valley. (N. D. Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - COLORADO - Populations on potatoes increased. Counts average 30 per 100 sweeps in Weld County. (Colo. Ins. Sur.). NORTH DAKOTA - Counts in Red River Valley potato fields were 5 adults per 10 sweeps. (N. D. Ins. Sur.). MICHIGAN - Counts in fields of potatoes, beans and alfalfa remain 1-2 per 5 sweeps at Saginaw, Stanton, Ionia and East Lansing; very few nymphs. (Hutson, Aug. 2). DELAWARE - On peppers in New Castle County. (Burbutis, Mason).

POTATO PSYLLID (Paratrioza cockerelli) - UTAH - Damaged early potatoes in St. George-Hurricane area, Washington County. (Knowlton). COLORADO - Adults on potatoes, 0.9 per 100 sweeps. No nymphs found in treated fields in Weld County. (Colo. Ins. Sur.). WYOMING - Adults averaged 3-5 per 100 sweeps in potato fields in Goshen County and 1 per 100 sweeps in Laramie County. A few nymphs and eggs found in Goshen County. (Fullerton).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Spotted infestations, in trace numbers, of overwintered beetles and larvae which were present earlier this season in a number of fields in central and southern Aroostook County. (Shands). SOUTH DAKOTA - Light populations of adults in most small garden plots of potatoes in east central area. (Mast).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Potato foliage injury by summer-generation adults very light in central and southern Aroostook County. (Shands). RHODE ISLAND - New-generation adults severe on potato generally in southern portion of State. (Kerr, Aug. 1). DELAWARE - Adults abundant on potatoes in New Castle County. (Burbutis, Mason).

FLEA BEETLES - NORTH DAKOTA - Increased populations of undetermined species in potato fields. Counts of 5-18 per sweep. (N. D. Ins. Sur.). WYOMING - Phyllotreta sp. adults averaged 10 per 100 plants in sugar beet fields in Goshen County. (Fullerton). UTAH - Damage moderate to Cache County potatoes. (Knowlton).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MICHIGAN - Few fifth-instar larvae in potatoes at Stanton, July 28; infestations heavy in early plantings. (Hutson, Aug. 2).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Low on potatoes. Apterous forms survived several days at 105° maximum temperatures. Some potato fields moderately damaged in eastern area. (Landis). IDAHO - Light on potato fields in vicinity of Grace, Caribou County. (Bishop, July 29). WYOMING - Averaged 6 per sweep in potato fields in Goshen County. (Fullerton). COLORADO - This species and Macrosiphum solanifolii continue in high numbers in some potato fields in Weld County. Counts average 100-400 per 100 sweeps. (Colo. Ins. Sur.). RHODE ISLAND - Locally severe on potato in southern section. (Kerr, Aug. 1).

Potato Aphids in Maine - Macrosiphum solanifolii, Aphis nasturtii, Myzus persicae and M. solani on untreated potatoes in central and southern Aroostook County had a normal increase of three-and-one-half times. Aphid numbers now vary from very small to moderately large, both in treated and untreated fields. (Shands).

APHIDS - MASSACHUSETTS - Increasing on potatoes and other vegetables. (Crop Pest Cont. Mess.). UTAH - Brevicoryne brassicae has increased conspicuously on cabbage and cauliflower in Salt Lake County commercial fields during past 10 days. (Knowlton). IDAHO - Infesting fields of lima beans in Caldwell area. (Bechtolt).

HORNWORMS (Protoparce spp.) - UTAH - Infestations and damage have recently increased on tomatoes and potatoes in Salt Lake County. (Knowlton). COLORADO - Larvae of P. quinquemaculata averaged 0.5 per 100 tomato leaves in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEW MEXICO - Protoparce sp. problem on chili and tomatoes in Espanola Valley. (N. M. Coop. Rpt.). INDIANA - Protoparce spp. continue to be abundant in tomato fields in north and central areas. The ratio of the two species is still about 6 of P. sexta to 1 of P. quinquemaculata. (Gould). MARYLAND - Moderately injurious to tomatoes in several localities. (U. Md., Ent. Dept.).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Averaged 21 per 100 sweeps in 7 fields of sweetpotatoes in St. Landry Parish. (Spink).

SQUASH BUG (Anasa tristis) - NEW MEXICO - Considerable damage to squash and cantaloupe at Los Lunas, Valencia County. (N. M. Coop. Rpt.). MARYLAND - All stages abundant. Destructive to squash in Frederick and Queen Annes Counties. (U. Md., Ent. Dept.).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Counts of 15-20 per 100 sweeps on sugar beets. Curly top incidence 5 percent in Garfield County and some observed in Larimer County. (Colo. Ins. Sur.).

SPIDER MITES (Tetranychus spp.) - IDAHO - Fairly large populations in beans in Aberdeen area, Bingham County. (Bishop, July 29). WASHINGTON - Light to moderate infestation of T. telarius on sugar beets and potatoes. Migrating to potatoes at Quincy. (Landis).

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Spotted infestations continue in Red River Valley sugar beet fields. Control measures underway. (N. D. Ins. Sur.). WYOMING - Larvae averaged 3 per 100 plants in sugar beet fields in Goshen and Laramie Counties. (Fullerton).

A PLANT BUG (Largus cinctus) - OREGON - This species and a lygaeid (Malezonotus sodalicus) caused concern by their abundance in strawberry plantings in Marion and Polk Counties. (Capizzi).

JAPANESE BEETLE (Popillia japonica) - VERMONT - Larvae damaging spring-planted strawberries in Woodstock area, Windsor County. (MacCollom, Aug. 1).

RASPBERRY CANE BORER (Oberea bimaculata) - VERMONT - Damage prevalent, statewide. (MacCollom, Aug. 1).

#### TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Populations on tobacco at highest peak of season, due to appearance of a new brood and migrations from harvested fields. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Continues heavy and injurious on tobacco. Treatment by aircraft has been general. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - High activity in many fields throughout State. Heavy rains upset treatment schedules resulting in square infestations of 50-100 percent. (Cott. News Lett.). SOUTH CAROLINA - Migration underway in several lower Coastal Plain counties. Young bolls should be protected. Infestations in treated fields 16 percent; untreated fields 45 percent, compared with 29 and 49 percent, respectively, a year ago. (Cott. Lett.). GEORGIA - Square counts in 16 Washington county fields showed average infestation of 40 percent. (Milner, Johnson). TENNESSEE - Population dropped considerably. Counts in

southern counties showed 11 percent infestation for infested fields. (Locke). ALABAMA - Due to scarcity of squares, infestation increasing in central and southern areas. Migration increasing some in these areas. Infestations have not been as severe statewide as last year, especially in north Alabama where many farmers have not used controls to date. (Grimes). LOUISIANA - Square examination in 73 fields in Madison Parish showed all infested at average of 18 percent. Squares becoming scarce in some fields. Infestations expected to increase in most fields. (Smith et al.). MISSOURI - Of 698 fields scouted, 70 infested at rate of 0-17 percent punctured squares. (Munson, Thomas, Wood). ARKANSAS - Second-generation emergence is general, but high population not evident in most fields, due to inadequate moisture. If heavy rains occur, boll weevil could become a problem. (Ark. Ins. Rpt.). OKLAHOMA - Continued to vary greatly field-to-field in all sections. Heaviest populations in east central and southeast areas, with 0-30 percent square infestations. Infestations declined slightly to southwest. (Okla. Coop. Sur.). TEXAS - Continues heavy in poorly treated fields in Waco area. Infestations averaged 30.7 percent punctured squares in 20 treated fields and 66.4 in 14 untreated fields. (Parencia et al.). Continues serious threat in some areas, especially in fields of succulent growth. (Gaines).

BOLLWORMS (*Heliothis* spp., et al.) - NORTH CAROLINA - While still not serious in many fields, serious trouble may be expected in late fields. (Cott. News Lett.). SOUTH CAROLINA - Numerous eggs found on top leaves in many areas. Infestations remain light in Florence area, although adults numerous in fields. (Taft et al.). GEORGIA - Eggs in 30 middle and south Georgia fields showed 93 per 100 terminals. Larval counts averaged 5 per 100 terminals. (Milner, Johnson). TENNESSEE - Light damage to cotton in west Tennessee. Some controls in northern section. (Locke). ALABAMA - No increase. (Grimes). LOUISIANA - Square infestation of 3 percent in 73 fields in Tallulah area. Damage sufficient to require control in most fields. (Smith et al.). MISSOURI - Of 698 fields examined, 197 infested, with 0-8 eggs and 0-11 larvae per 100 terminals. (Munson, Thomas, Wood). ARKANSAS - Moth emergence counts heavy. (Ark. Ins. Rpt.). OKLAHOMA - Damaging infestations up to 23 percent in squares and small bolls in southeast and south central areas along the Red River. Lighter populations in several other areas. (Okla. Coop. Sur.). TEXAS - Little change in Waco area, with injurious infestations continuing in succulent fields. (Parencia et al.). Bollworms continue serious threat in several areas of State. (Gaines). NEW MEXICO - Moderate infestation damaging cotton in Eddy, Chaves and Lea Counties. Control good. (N. M. Coop. Rpt.). ARIZONA - Medium to heavy in area of Maricopa County; 7 larvae per 60 plants in some heavily infested fields. Lower populations in areas of Pinal County. (Ariz. Coop. Sur.). LOUISIANA - Eggs increasing in Tensas Parish. (Spink).

CABBAGE LOOPER (*Trichoplusia ni*) - NORTH CAROLINA - Appearing in many southeastern fields. (Cott. News Lett.). GEORGIA - Light to moderate in 9 counties. (Milner, Johnson). NEW MEXICO - Light to moderate infestations damaging cotton in Lea and Eddy Counties. (N. M. Coop. Rpt.). LOUISIANA - Several reports of severe "ragging" of foliage in Tallulah area. (Smith et al.).

BEE T ARMYWORM (*Spodoptera exigua*) - ARIZONA - Medium to heavy population continues in some areas of Maricopa, Yuma and Pinal Counties. Moth emergence very heavy. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Light populations beginning to appear in cotton in southwest and central areas. (Ariz. Coop. Sur.).

FALL ARMYWORM (*Laphygma frugiperda*) - LOUISIANA - Heavy infestation requiring controls in Franklin Parish. (Spink).

COTTON LEAFWORM (*Alabama argillacea*) - TEXAS - Found for first time this season in 3 counties in high plains area. (Gaines). NEW MEXICO - Light in Lea County; control needed. (N. M. Coop. Rpt.).

FLEAHOPPERS - MISSOURI - Of 698 fields scouted, 555 infested, with 0-22 fleahoppers per 100 terminals. (Munson, Thomas, Wood). OKLAHOMA - Psallus seriatus continues to decline in cotton fields over State. (Okla. Coop. Sur.). TEXAS - Continues of some concern in north and south plains area. (Gaines). NEW MEXICO - Moderate in Eddy and Roosevelt Counties; 4-5 per 100 sweeps in Eddy, 4-16 in Roosevelt. Many growers treating. (N. M. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Damaging terminals of cotton near Deming; about 5 per 100 terminals, mostly nymphs. (N. M. Coop. Rpt.). ARIZONA - Heavy in Maricopa, Pinal and Pima Counties; serious damage continues in untreated cotton. Counts high; many fields averaging 3-5 nymphs per plant; 2-3 nymphs per plant in some fields in Yuma County, with 25-35 percent punctured squares. Lighter in Graham and Cochise Counties. (Ariz. Coop. Sur.).

APHIDS - NORTH CAROLINA - Still a problem in some fields. (Cott. News Lett.). SOUTH CAROLINA - Some spotted infestations, but no serious outbreak in Florence area. (Taft et al.). GEORGIA - Aphis gossypii light in 9 counties. (Milner, Johnson). TENNESSEE - Building up in fields treated for boll weevil and bollworm in west Tennessee. (Locke). ARKANSAS - Increased activity in some fields. (Ark. Ins. Rpt.).

SPIDER MITES - NORTH CAROLINA - Heavy buildup and spread on cotton in area of Robeson County. (Bartley). GEORGIA - Light to moderate in 9 counties. (Milner, Johnson). TENNESSEE - Continues to increase; spotted damage severe in west Tennessee. (Locke). ALABAMA - Unidentified species increasing in most fields in north Alabama. Particular concern in Lauderdale County. (Grimes). MISSOURI - Of 698 fields scouted, 307 had infestations. (Munson, Thomas, Wood). ARKANSAS - Activity increasing; spot treatment effective. (Ark. Ins. Rpt.). ARIZONA - Tetranychus cinnabarinus continues medium to heavy in local areas of Pinal County. (Ariz. Coop. Sur.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

LARCH SAWFLY (Pristiphora erichsonii) - MINNESOTA - Heavy to complete defoliation occurred in areas of Pine County. (Minn. Ins. Rpt.).

SAWFLIES - ILLINOIS - A web-spinning sawfly very abundant in some areas in northern half of State. (Ill. Ins. Rpt.). MINNESOTA - Neodiprion lecontei in second and third instars, occurring on jack pine, especially in plantations widely scattered over St. Louis, Carlton, Pine, Aitkin, Itasca and Cass Counties. Diprion similis second-generation adults about 15 percent emerged in Pine and Carlton Counties. (Minn. Ins. Rpt.). WISCONSIN - Neodiprion swainei caused severe defoliation on scattered jack pine in Sauk County, July 27. (Wis. Coop. Sur.).

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Oviposition general through northwest jack pine area, July 17-23. Egg laying heavy in areas of heavy defoliation. (Wis. Coop. Sur.).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - MASSACHUSETTS - Pupating in red pine week of July 17 at South Carver, Plymouth County. (Tomlinson, July 22).

BARK BEETLES - TEXAS - Control of Dendroctonus frontalis hampered last week of June by 7-inch rain in area; infestation continued at rapid rate in spite of increased control activity by landowners. A total of 199 areas lacked control at end of June. Natural enemies failed to check epidemic. Undetermined Ips beetles have killed pine in eastern Trinity County, eastern Rusk County, central Polk County and eastern San Jacinto County on areas previously damaged by fire or hail. An undetermined beetle reported on loblolly pine reproduction in northwestern portion of Liberty County. Undetermined turpentine beetles infested sawlog-size pines in Newton County, following a partial cutting. (Young, June Rpt.).

WHITE-PINE WEEVIL (*Pissodes strobi*) - MINNESOTA - Injury apparent in white and jack pine; two 8-10-year-old jack pine plantations in Lake County lightly infested. (Minn. Ins. Rpt.).

SARATOGA SPITTLEBUG (*Aphrophora saratogensis*) - WISCONSIN - A total of 1,599 acres of red pine were treated between July 26-30 in five northeast area counties. Forty-five acres were treated in a sixth county in the northwest. (Wis. Coop. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - CONNECTICUT - First tent of season observed at Ellington, Tolland County, July 29. (Phillips). DELAWARE - Colonies numerous along roadside wild crab apple and cherry in central Sussex County. (Burbutis, Mason). MISSOURI - Commonly occurring on wild cherry, persimmon and walnut throughout State. (Munson, Thomas, Wood). WASHINGTON - Nests quite numerous on shade and fruit trees in Sumner area. (Doucette).

AMERICAN PLUM BORER (*Euzophera semifuneralis*) - CALIFORNIA - Medium infestation occurring on highway sycamore trees in Bakersfield, Kern County. (P. Tibbetts). NEW YORK - Considerable local damage in association with a fungus disease, on London planetrees. A number of trees killed and others dying in an area of Suffolk County, Long Island. This is apparently a new host record for the State. (N. Y. Wkly. Rpt.).

LARGE ASPEN TORTRIX (*Choristoneura conflictana*)\* - CALIFORNIA - Occurring over a large area of aspen stands in the South Fork of East Creek and Long Valley, Modoc County. Severe defoliation resulted from a heavy population. Adults collected by W. Hamilton. First record for State. Det. by J. A. Powell. (W. Hamilton, C. B. Eaton)

A TUSSOCK MOTH (*Hemerocampa* sp.) - NEW MEXICO - About 3,000 acres infested in Magdalena Mountains; controls completed. (N. M. Coop. Rpt.).

MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) - MINNESOTA - On willow, elm and brush in several areas of State. (Minn. Ins. Rpt.).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - IDAHO - Much more numerous this year than in previous 3 or 4; probably due to poor control of first generation. (Scott). UTAH - Taken 60-90 percent of green leaf surface from several hundred trees in Holladay-Millcreek area of Salt Lake County. Damage elsewhere in the county and in Weber County has increased during recent weeks. (Knowlton). KANSAS - Infesting elms in Sumner and Chautauqua Counties. These are new county records. (Calkins, Gates). OKLAHOMA - Heavy to severe damage to foliage in most areas of State. Reports from counties in the northwest and west central sections indicate that most of State (excluding the panhandle) now infested with pest. Larvae pupating in Stillwater and causing some concern to homeowners as they move down tree trunks. (Okla. Coop. Sur.). MISSOURI - Defoliated trees in east central and central areas. Second generation being completed in these areas. (Munson, Thomas, Wood).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - CALIFORNIA - Heavy populations occurring in street elms in Sacramento, Sacramento County. Extremely heavy flights occurred August 1. (Cal. Coop. Rpt.).

ELM CALLIGRAPH (*Calligrapha scalaris*) - OKLAHOMA - Infesting elms in Garfield and Kay Counties. (Okla. Coop. Sur.).

TWIG PRUNER (*Elaphidion villosum*) - VERMONT - Damaging oaks in Burlington area. (MacCollom, Aug. 1). MASSACHUSETTS - Ground littered with cut-off branches under many oaks in Wareham, Plymouth County. (Tomlinson, July 22).

\* Freeman, T. N., 1958. Canad. Ent. 90 (Suppl. 7):1-89.



LOCUST BORER (Megacyllene robiniae) - UTAH - Locust borer has killed several hundred locust trees in the Salt Lake City, Holladay, East Millcreek, Taylorsville, and Granger areas of Salt Lake County. (Knowlton).

GALL MIDGES (Dasyneura spp.) - INDIANA - D. gleditschiae common on honeylocust at a nursery at Gary. (Schuder). MASSACHUSETTS - D. pseudacaciae generally quite prevalent during early July, being especially damaging to young trees. (Kuzmiski).

BAGWORM (Thyridopteryx ephemeraeformis) - NEW JERSEY - Heavy in many areas. (Ins.-Dis. Newsl., Aug. 2). MARYLAND - Heavy infestations on cypress along U. S. 13, south of Salisbury, Wicomico County. (U. Md., Ent. Dept.). ALABAMA - Heavy on arborvitae and camellias in Chilton County. (Helms). OKLAHOMA - Untreated infestations continue to cause heavy damage to evergreens over most of State. Reports of evergreens being killed by this pest are common this summer. (Okla. Coop. Sur.). ILLINOIS - Causing severe defoliation of evergreens in many areas of State. (Ill. Ins. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - NEW JERSEY - Damage becoming severe in central counties. (Ins.-Dis. Newsl., Aug. 2). ALABAMA - Plentiful. (Guyton).

YELLOW-NECKED CATERPILLAR (Datana ministra) - ILLINOIS - Defoliation of hawthorn and other bushes becoming noticeable in northern half of State. (Ill. Ins. Rpt.).

LEPIDOPTEROUS LARVAE - OREGON - Seriously damaging foliage on several acres of hawthorn trees in a Multnomah County nursery. (Nicolaison).

APHIDS - MARYLAND - Heavy on tulip trees at Takoma Park, Montgomery County. (U. Md., Ent. Dept.). ALABAMA - Aphis spiraeicola heavy on spirea in Lee County. (Guyton). MINNESOTA - Prociphilus sp. reported commonly from Koochiching, St. Louis, Pine and Lake of the Woods Counties on maple. (Minn. Ins. Rpt.). UTAH - Myzocallis ulmifoliae numerous at Fillmore in Millard County and Manti in Sanpete County. (Knowlton). WASHINGTON - Chromaphis juglandicola abundant on black walnut. Leaves glazed at Yakima. (Landis). Undetermined species abundant on maples at Sumner. (Doucette).

SCALE INSECTS - CALIFORNIA - Heavy infestation of Asterolecanium arabis occurring locally on Pittosporum tobira in Fresno, Fresno County. (Cal. Coop. Rpt.) Chionaspis ortholobis infesting Ceanothus velutinus in Mammoth Lakes area, Mono County; plants severely damaged. Killing of this important browse and undercover plant will be serious. (E. C. Nord, W. Mogill). UTAH - Lepidosaphes ulmi infestation extremely heavy on weeping willows at Orem, Provo and Salt Lake City. Gossyparia spuria infestations common in Salt Lake City-Holladay area of Salt Lake County. (Knowlton). WYOMING - Aspidiotus ancylus still prevalent on caragana hedges in Fremont and Washakie Counties. This scale was first reported as unidentified in CEIR 10(19):363. (Fullerton). IOWA - Pulvinaria innumerabilis severe at Farley, Dubuque County. (Iowa Ins. Inf., Aug. 1).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Infesting evergreens in Atoka County and a variety of shrubs in Cleveland County. (Okla. Coop. Sur.). MINNESOTA - Populations, statewide, building up in evergreen plantings during recent hot weather. (Minn. Ins. Rpt.). WYOMING - T. telarius infesting ornamentals throughout State. (Fullerton).

BROWN GARDEN SNAIL (Helix aspersa) - WASHINGTON - Collected at Seaview near Long Beach, Pacific County. Probably brought into the area many years ago. Causing considerable damage to flowers. New record for the State. Det. by Eyerdam. (Breakey).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (*Musca autumnalis*) - NEBRASKA - Collections made in Douglas, Saunders and Lancaster Counties, August 5. Abundant on cattle in Douglas County, light in other 2 counties. This is the first report of the species for the State. (Jones). MISSOURI - Collections made for the first time in Pike County. Det. by C. W. Wingo. (Munson, Thomas, Wood). ILLINOIS - Ranges 7-30 per animal in northern half of State; herd averages range 11-19 per animal. (Ill. Ins. Rpt.). OHIO - Total of 45 adults from 2 cows in Franklin County. (Holdsworth). NEW YORK - Populations remain high in central area. Herd averages up to 200 per head; 50 or more per head usual. Annoyance serious. Survey in central, eastern and northern areas, July 13-22, showed face fly on every dairy and beef herd. Moderate to heavy populations found in Delaware, Greene, Ulster, Saratoga, Montgomery, Madison, Oswego, Jefferson, Lewis and St. Lawrence Counties. (N. Y. Wkly. Rpt.). VERMONT - Counts over 100 on some heifers in University of Vermont herd. (MacCollom, Aug. 1). MAINE - Populations increasing on cattle in southern part of State. (Boulanger).

MOSQUITOES - MARYLAND - Annoying in tidewater areas. Populations of *Culex* sp. and *Aedes* sp. up considerably due to recent heavy rains. (U. Md., Ent. Dept.). DELAWARE - *Anopheles quadrimaculatus* still the most abundant mosquito collected from a single red, artificial resting box at Bombay Hook Refuge, Kent County, July 27, August 1 and 2. (Burbutis, Mason). WISCONSIN - Undetermined species very annoying in Waukesha County. *Culex pipiens* and *Aedes dorsalis* annoying in Madison area. (Wis. Coop. Sur.). MINNESOTA - *Aedes vexans* was most dominant species in light trap and larval collections, week ending July 30. In larval collections, most which were made in Anoka and Washington Counties, *Culiseta tarsalis* found in 26. (Minn. Ins. Rpt.). UTAH - *Culex tarsalis* increasing in northwest Weber, with controls applied to 2,000 acres; most annoying in Warren and West Warren areas. *Aedes dorsalis* and *A. nigromaculis* populations remain low. (Fronk). Hot weather increasing mosquito breeding; controls applied to 500 acres of meadow in Helper and south Wellington areas, Carbon County, disappointing. (Knowlton, Hassell). IDAHO - Undetermined species very plentiful and annoying in a southwestern area; more so than at any time in past 4 years. (Scott). TEXAS - In Jefferson County during June *Mansonia perturbans* found once at Port Arthur; *Aedes sollicitans* and *A. taeniorhynchus* were light; *Psorophora confinnis* occurred in epidemic numbers, while *P. ciliata* was light in extreme north section of county; *Anopheles crucians* occurred throughout area and *A. quadrimaculatus* was present at Beaumont. (Jeff. Co. Mosq. Cont. Comm.).

TABANIDS - WISCONSIN - Deer flies annoying Sauk County herds. (Wis. Coop. Sur.). IOWA - An unspecified species of deer fly annoying humans and livestock in most of State. (Iowa Ins. Inf., Aug. 1). OKLAHOMA - Horse flies, mainly *Tabanus sulcifrons*, *T. abactor* and *Tabanus* sp. caused considerable irritation to livestock in wooded lowland areas throughout eastern half of State. In Payne County, *T. sulcifrons* averaged 3-4 per animal. (Okla. Coop. Sur.). MISSOURI - Horse flies, mainly *T. sulcifrons*, on horses and cattle in northeast and east central areas. Counts of 3-25 per infested animal. (Munson, Thomas, Wood). NEW YORK - *Tabanus quinquevittatus* increasing. (N. Y. Wkly. Rpt.).

HORN FLY (*Siphona irritans*) - UTAH - Becoming troublesome in many farm areas in Weber County; controls being applied. (Knowlton). OKLAHOMA - Populations on decline on Payne County cattle. Counts averaged 300-600 per animal on range cattle in east central area. Reported causing concern and requiring treatment in many areas throughout State from tip of panhandle to extreme southeast section. (Okla. Coop. Sur.). OHIO - Light, locally, on cattle in Franklin County. (Holdsworth). NEW YORK - Populations light to moderate. (N. Y. Wkly. Rpt.).

BLACK FLIES - MARYLAND - Adults abundant and annoying to humans in suburban sections of Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). UTAH - Simuliids numerous in Draper area of Salt Lake County. (Knowlton).

FLIES - WISCONSIN - Fly problem on dairy farms greatly increased. (Wis. Coop. Sur.). NEW YORK - House flies remain very abundant in poorly treated barns. Stable flies on the increase. (N. Y. Wkly. Rpt.).

A PUSS CATERPILLAR (probably Megalopyge opercularis) - OKLAHOMA - Irritating to children playing under infested shade trees in McCurtain, Bryan, Cotton and Washington Counties. (Okla. Coop. Sur.).

HORNETS AND WASPS - MARYLAND - Annoying homeowners at several localities in central areas. (U. Md., Ent. Dept.).

TICKS - ALABAMA - Rhipicephalus sanguineus of considerable concern in houses in Mobile. (Grimes). OKLAHOMA - R. sanguineus infesting pets in localized areas of Okfuskee County, while considerable numbers of larvae and nymphs of Amblyomma americanum continue to infest cattle in wooded areas in eastern half of State. Argas persicus infesting flock of chickens in Pittsburg County. (Okla. Coop. Sur.).

Mites and Lice on Chickens in New York - Populations of chicken mites at very serious levels. Too easily found in central area poultry farms. Lice and northern fowl mite not as serious. (N. Y. Wkly. Rpt.).

### STORED-PRODUCT INSECTS

Stored-grain Insects in Alabama - During past few weeks, stored-grain insect surveys in Mobile and Lee Counties revealed the following: INDIAN-MEAL MOTH (Plodia interpunctella) moderate in Mobile County, scarce in Lee County; CADELLE (Tenebroides mauritanicus) present in moderate numbers in both counties; YELLOW MEALWORM (Tenebrio molitor) and DARK MEALWORM (T. obscurus) were light to moderate in both areas; CIGARETTE BEETLE (Lasioderma serricorne) prevalent in Lee County, rather scarce in Mobile County. HIDE BEETLE (Dermostes maculatus) was scarce in Lee County, with none found in Mobile County. Moderate infestations of RED FLOUR BEETLE (Tribolium castaneum) were reported from both counties. Populations of ALMOND MOTH (Ephestia cautella) were light to moderate in Lee County, with none found in Mobile County. SQUARE-NECKED GRAIN BEETLE (Cathartus quadricollis) and LESSER GRAIN BORER (Rhyzopertha dominica) were found in Mobile County in limited numbers only. (Seibels, Guyton).

Stored-grain Insects in Texas - Light to medium infestations of SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), FLAT GRAIN BEETLE (Cryptolestes pusillus), and CONFUSED FLOUR BEETLE (Tribolium confusum) observed in stored milo in Lamb and Wichita Counties. Undetermined weevils, bran bugs and moths were medium in stored milo in Colorado County. (Texas Coop. Rpt.).

RUSTY GRAIN BEETLE (Cryptolestes ferrugineus) - CALIFORNIA - Medium in stored sorghum in harbor terminal in Oakland, Alameda County. (Cal. Coop. Rpt.).

### BENEFICIAL INSECTS

LADY BEETLES - COLORADO - Hippodamia spp. declined in alfalfa; ranged 3-40 per 100 sweeps in Prowers, Bent, Otero, Crowley, Pueblo, Weld, Larimer and Boulder Counties. (Colo. Ins. Sur.). WYOMING - Hippodamia sp. averaged 12 adults and 5 larvae per 25 sweeps in alfalfa and potato fields sampled in Goshen and Laramie Counties. (Fullerton). UTAH - Unspecified species heavily attacked moderate grain aphid infestation in Tremonton area, Box Elder County. (Knowlton). IDAHO - Unspecified species numerous in southwest; aphid populations in untreated alfalfa, hops and orchards being contained or reduced by these predators. (Scott).

NABIDS (Nabis spp.) - COLORADO - Increased on potatoes and alfalfa; ranged 30-50 per 100 sweeps in Weld, Larimer and Boulder Counties. (Colo. Ins. Sur.). WYOMING - Adults averaged 8 per 25 sweeps in fields of alfalfa and potatoes sampled in Goshen and Laramie Counties. (Fullerton).

LACEWINGS (Chrysopa spp.) - COLORADO - C. coloradensis more numerous on alfalfa and potatoes; 2-30 per 100 sweeps in Weld, Larimer and Boulder Counties. (Colo. Ins. Sur.). IDAHO - Very numerous in southwest section; reducing or containing aphid populations in untreated alfalfa, hops and orchards. (Scott). WYOMING - Larvae averaged 3 per 25 sweeps in potato fields sampled in Goshen County. (Fullerton).

A MIRID (Deraeocoris sp.) - IDAHO - Adults and nymphs feeding on mealy plum aphid infestation in Moscow. (Portman, McNeill; July 29).

HYMENOPTEROUS PARASITES - IDAHO - Rapid buildup indicated in southwest area of State by increasing numbers of aphid mummies. (Scott).

### MISCELLANEOUS INSECTS

A JAPANESE WEEVIL (Calomycterus setarius) - MARYLAND - Adults collected from various shrubs at a nursery in Montgomery County; a new county record. (U. Md., Ent. Dept.). RHODE ISLAND - Adults continue to invade homes in many areas of State. (Hansen, Aug. 2).

JAPANESE BEETLE (*Popillia japonica*) - For the most part, observations at airports in northern New England were negative. However, infestation persists at the Lebanon Municipal Airport, NEW HAMPSHIRE, although at a reduced level, as result of treatments during July. Light infestation observed at Keene Municipal Airport, also in New Hampshire. Neither considered hazardous from standpoint of spread. Four adults found at Grenier AFB, Manchester, New Hampshire. High potential hazard exists at this field due to nationwide range of military air traffic; surveillance will continue. Populations remain heavy at Otis AFB, at Sandwich, and at the airport at Palmer, MASSACHUSETTS; infestations negative to medium at 28 other airfields checked in State. In RHODE ISLAND, populations were light at airfields at Quonset (Navy), Westerly (Municipal) and the U. S. Naval Training Station at Charleston; a medium infestation exists at Hillsboro commercial field. Beetle populations ranged very light to medium at 11 airfields checked in CONNECTICUT. Treatments have been applied at all airports where beetles were found. Adult prevalence in the NEW JERSEY area continued to decline. At Pomona Airport, Atlantic City, treatments were discontinued and it is anticipated that conditions at Teterboro Airport will permit suspension of activities there. Although adults are still encountered on host plants, fewer are in flight than formerly. Adults at peak of emergence in southwestern PENNSYLVANIA, but infestation medium, with occasional heavier spots. Few beetles flying around loading planes at Greater Pittsburgh Airport; aerosoling continues. In northwestern Pennsylvania, infestation spotty but heavier than in recent years. Infestation has practically disappeared in Cumberland Valley and southeastern part of State. Few beetles still apparent at Philadelphia International Airport, where aerosoling of planes continues. (PPC).

Beetles still present around Andrews AFB, Camp Springs, MARYLAND; mostly in area adjacent to golf course. None seen around loading ramps, but aerosoling requirements still in effect. Beetles extremely light at Friendship Airport, Baltimore, Maryland, but still attracted to aircraft. Aerosol and residual treatments still required. Somewhat the same condition exists at the New Castle County Airport, New Castle, DELAWARE; aerosoling still required. Feeding still evident in many of the VIRGINIA counties previously reported; however, peak has been reached and passed throughout the State. Treatments in eastern portion of Washington and Smyth Counties were discontinued August 4; populations declined perceptibly in produce areas, except for some moderate feeding on field corn in these 2 counties. Treatments necessary at only 2 airfields during the week, viz., the U. S. Naval Air Station at Oceana and at Patrick Henry Airport, Newport News. Scouting at 9 other fields negative. No beetles were found at the National Airport at Washington, D. C. on August 5. Peak appears to have passed in WEST VIRGINIA, with only 1 new spot of heavy feeding reported in Folsom, Wetzel County. Beetles declining rapidly in southeastern sections. (PPC). More adults captured in 2 traps in Newton County, INDIANA, than in same locations during 1958 and 1959. (Gould). Trapping in NORTH DAKOTA continues, with negative results to date. (N. D. Ins. Sur.). Generally more abundant in NEW YORK this year. (N.Y. Wkly.Rpt.).

A SOLDIER FLY (*Hermetia illucens*) - NORTH CAROLINA - Larvae infesting earthworm bed in New Hanover County. (Jones, Farrier).

CICADA KILLER (*Sphecius speciosus*) - Heavy populations in Brownsville, Cameron County. (Day).

#### ADDITIONAL NOTES

MAINE - APPLE MAGGOT (*Rhagoletis pomonella*) emergence in cages decreasing rapidly in Monmouth area; infestations approaching moderate level in untreated blocks. IMPORTED CABBAGEWORM (*Pieris rapae*) heavy with severe damage to cole crops in Cumberland County. EUROPEAN CORN BORER (*Pyrausta nubilalis*) generally light in southern area on untreated corn. TARNISHED PLANT BUG (*Lygus lineolaris*) caused light damage to lettuce in Caribou area. Moderate numbers of APHIDS on potatoes in Cumberland County causing moderate damage. (Boulanger).

VERMONT - APPLE MAGGOT, second-brood RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) and EUROPEAN RED MITE (Panonychus ulmi) are three major problems of orchardists. EYE-SPOTTED BUD MOTH (Spilonota ocellana) feeding on terminals in Chittenden County orchard. POTATO LEAFHOPPER (Empoasca fabae) and unspecified GRASSHOPPERS reaching economic populations on some alfalfa and hay fields. PROMETHEA MOTH (Callosamia promethia) defoliating lilacs in Burlington area and JAPANESE BEETLE (Popillia japonica) continues to emerge, causing injury to many ornamentals. LOCUST BORER (Megacyllene robiniae) emerging from locust to feed on goldenrod; damage very evident. (MacCollum).

NEW YORK - ORIENTAL FRUIT MOTH (Grapholitha molesta) injury apparent on growing tips and fruit in Chautauqua County, and GRAPE BERRY MOTH (Paralobesia viteana) second-brood emergence is very slow this year. APPLE APHID (Aphis pomi) building up in a few apple orchards in same county and continues to flourish in Niagara County in spite of treatments. Also in Niagara County, CODLING MOTH (Carpocapsa pomonella) adults again appearing in small numbers in bait traps and RED-BANDED LEAF ROLLER continues to lay eggs. EUROPEAN RED MITE building up rapidly in many orchards in this county, with growers preparing controls; however, numbers are falling off very rapidly in Monroe County. First CORN EARWORM (Heliothis zea) adults caught at Ithaca, night of August 6; coupled with existing population in Erie County, this means upstate sweet corn now is under threat of attack; seriousness depends on temperatures during August and early September. EUROPEAN CORN BORER infested some celery fields in Pine Island area, Orange County, with 5 percent damage in one 5-acre field. Still present in many fields of corn in Niagara County. LEAFHOPPERS are very abundant in some potato fields in this county. (N. Y. Wkly. Rpt.).

NEBRASKA - Results of first-brood EUROPEAN CORN BORER survey in Cumming County showed 55.2 percent of stalks infested in 24 fields, with an average of 79 borers per 100 stalks and an average of 8,684 per acre. In 25 fields sampled in Hall County, 34 percent of stalks were infested with an average of 36 borers per 100 plants and 4,955 per acre. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) heavy on potatoes in North Platte. SOD WEBWORMS are damaging a number of lawns in same location. (Hill, Pruess).

NEVADA - PEA APHID (Macrosiphum pisi) averaged 5-10 to 20-25 per sweep in alfalfa hay fields in Orovalda, Paradise Valley and Winnemucca, Humboldt County; varied 0 to occasional specimens in seed fields in Orovalda and Kings River Valley, since most fields have recently been treated. Generally light, 4-8 to 20-40 per sweep in Dayton, Fernley and Mason and Smith Valleys, Lyon County; averaged 3 per sweep in Hazen, Churchill County, and Schurz, Mineral County. SPOTTED ALFALFA APHID (Therioaphis maculata) very low in Fernley and Mason Valley, Lyon County; Hazen, Churchill County; and Schurz, Mineral County. None found in Smith Valley, Lyon County or Humboldt County. LYGUS BUGS (Lygus spp.) averaged 15-30 adults and/or nymphs per sweep in Humboldt County alfalfa hay fields; adults averaged 1-2 per sweep in seed fields recently treated in Orovalda and Kings River Valley. Adults heavy on Russianthistle in these areas. Averaged 10-40 per sweep in Lyon County and at Hazen, Churchill County. ENGLISH GRAIN APHID (Macrosiphum granarium) averaged 5-10 per sweep in Smith Valley oats, Lyon County. ALFALFA CATERPILLAR (Colias philodice erytheme) damaged 150 acres of seed alfalfa in Kings River Valley. GRASSHOPPERS (Melanoplus spp.) averaged 1-3 per square yard in alfalfa in Hazen, Churchill County. In Mason Valley, Lyon County, TOBACCO FLEA BEETLE (Epitrix hirtipennis) averaged 5-8 and a LEAFHOPPER (Empoasca sp.) averaged 10-20 per sweep on potatoes. A moderate to heavy infestation of ELM LEAF BEETLE (Galerucella xanthomelaena) in one section of Winnemucca, Humboldt County, is the first record of this species in the county and the farthest north the beetle is known to occur in the State. SPIDER MITES on elm and poplar and VIRGINIA-CREEPER LEAFHOPPER (Erythroneura ziczac) on Virginia creeper, are moderate to heavy in the same area. In Washoe County, Aedes nigromaculis is heavy in Wadsworth and Aedes spp. are heavy in Reno. (Bechtel, Parker, Rocca, Denning).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quinq.	Heliothis zea	vires.
<u>ALABAMA</u>								
Auburn 8/5			3				52	4
<u>ARIZONA</u>								
Mesa 7/26-31			19				288	
<u>ARKANSAS</u>								
Hope 7/21-8/3	27	3		6			13	
Fayetteville 7/21- 8/3	20	4					136	
*Morrilton 7/21-8/3	143	26					127	
Kelso 7/28-8/3	14	6					70	
<u>CALIFORNIA</u>								
Davis 7/20-8/3	109	98		35			34	
<u>DELAWARE</u>								
Bridgeville 7/29- 8/4					85	7		
<u>ILLINOIS</u>								
Urbana 7/29-8/5	187			20	25			
<u>INDIANA (Counties)</u>								
Lawrence 7/17-30 8/1,2	78	14	34	2	75	32	4	
Tippecanoe 7/29- 8/4	55	3	4	6	4	1		
Vanderburg 7/27- 8/1,3	222	60	95	2	16		62	
<u>IOWA</u>								
Ames 7/23-28	497	80		167				
Ankeny 7/23-29	7	1		5				
Soldier 7/21-29	741	294		270				
Milford 7/21-28	1,228	381		442				
Columbus Jct. 7/25- 28	308	91		87				
<u>KANSAS</u>								
Garden City 7/19-22, 26-29	38	116		10	6	12	11	
Hays 7/28,30,8/1	22	71		3		2	3	
Manhattan 7/28-8/2,4	42	41		1		1	8	
Mound Valley 8/3	40	6		22	9	2	4	
Wathena 7/28	17	6		5	2	3		
<u>LOUISIANA</u>								
Franklin 8/1	6	3	71	1			13	
Baton Rouge 7/29- 8/4	18	9	165				51	
Tallulah 8/5	39		11				16	9
<u>MAINE</u>								
Monmouth 7/26	2							

\*Two traps - Morrilton.

LIGHT TRAP COLLECTIONS - Continued

	Pseud. unip.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta	quinq.	Heliothis zea	vires.
<b>MISSISSIPPI</b>								
*Stoneville 7/29-8/4	101	18	178		28		427	25
<b>MISSOURI</b>								
Sikeston 7/30-8/5	12	5	1				91	
Columbia 7/30-8/5	25	27	42			14	4	
<b>NEBRASKA</b>								
Kearney 7/20-22, 24-29	498	194	3	320	4	1	1	1
Lincoln 7/22-8/4	1,418	186		449		4	25	
North Platte 7/20- 8/2	268	130	2	326	3	2	3	1
Scotts Bluff 7/7-14, 20-27	501	72		893		2		
<b>NEW JERSEY</b>								
*Bridgeton 8/4,8	47	16	58		27	2	31	
<b>SOUTH CAROLINA</b>								
Clemson 7/30-8/5	67	14	103	6	16	6	67	1
Charleston 8/1-7	5	4	81		3		53	2
<b>TENNESSEE (County)</b>								
Blount 7/19-8/8	33	54	267	10	3	39	32	
<b>TEXAS</b>								
Brownsville 7/19-21, 26-29		601			25	112	1,439	
Waco 8/5	169		87	88			2,699	12
<b>WISCONSIN</b>								
*Janesville 7/26-8/1	581							
Platteville 7/23-8/1	496	144		24				
Middleton 7/26-8/1	67	58		9				
*Arlington 7/26-8/1	459	58		59				
*Theresa 7/26-8/1	102					1		
Oakfield 7/26-8/1	37							
Fairwater 7/26-8/1	175							
Fond du Lac 7/26-8/1	13							
Rosendale 7/26-8/1	85							
Ripon 7/26-8/1	8							
La Crosse 7/26-8/1	336							
Antigo 7/26-8/1		17		1				

\* Two traps - Stoneville; 2 traps - Bridgeton; 2 traps - Janesville; 2 traps - Arlington; 3 traps - Theresa.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

FALL ARMYWORM continues damaging in Georgia, Alabama and Louisiana; larvae present on host crops in Missouri, Arkansas, Illinois and Maryland. (p. 779). Second-brood EUROPEAN CORN BORER expected to be considerably larger than in 1959 in Iowa, particularly in west central area; severe second brood indicated in many areas of Nebraska. (pp. 780, 794). WHITE-FRINGED BEETLES found at 2 locations in Arkansas; treatments applied. (p. 782).

APPLE MAGGOT adults common in Minnesota and Wisconsin. (p. 783).

ORIENTAL FRUIT FLY female trapped at Anaheim, Orange County, California, during week ending August 6. Intensive cooperative trapping program to be put into operation. This is first record in continental United States. (pp. 783, 784).

Third-generation BOLL WEEVILS appearing in South Carolina and Arkansas; infestation counts remain relatively high in a number of areas. (p. 786). CABBAGE LOOPER reported "ragging" leaves of cotton in several states and COTTON LEAFWORM moths appearing as far north as Missouri. (pp. 787, 796). COTTON SQUARE BORER becoming heavy in Arizona and SPIDER MITES increasing in cotton in several states. (pp. 787, 788).

In Minnesota, LARCH SAWFLY and SPRUCE BUDWORM defoliation of host trees continued during season. (pp. 788, 789). ELM LEAF BEETLE heavy on elms in areas of Inyo County, California; damage very heavy on untreated trees in Nevada; damage increasing in Weber and Salt Lake Counties, Utah; and damaging at Grand Junction, Colorado. (p. 789).

Severe outbreak of SALT MARSH MOSQUITO occurred on lower Eastern Shore of Maryland and abundant in Brunswick County, North Carolina, with local residents unable to work without protection. FACE FLY populations continue to increase in Illinois and remain high in eastern Indiana. (p. 790).

JAPANESE BEETLE populations greatly reduced generally in Eastern States; interceptions of beetles in airplanes reported from California, Oregon, Washington and Florida. (pp. 792, 793).

CORRECTIONS. (p. 794).

ADDITIONAL NOTES. (p. 794).

INSECT DETECTION: Oriental fruit fly recorded in California. (p. 783). New county records reported were elm leaf beetle in Major County, Oklahoma, and mimosa webworm in Taylor County, Georgia (p. 789); giant hornet in Wilson County, North Carolina (p. 794); and face fly in Grundy, Clayton and Allamakee Counties, Iowa (p. 790).

NOTE - Scientific name of POTATO APHID is now Macrosiphum euphorbiae (Thomas) (p. 784).

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Reports in this issue are for week ending August 12, unless otherwise indicated

WEATHER OF THE WEEK ENDING AUGUST 15

Most areas from the Rocky Mountains westward recorded above-normal average temperatures again this week and little rainfall, continuing the generally hot, dry condition which has been the general pattern during most of this year in that region. Temperatures were 3° to 6° above normal over much of the Pacific Northwest, the northern Rocky Mountain and the Plateau States. Below-normal temperatures were the rule over all areas from the Great Plains eastward, except in the Southeastern States where warm, humid, tropical air left weekly averages up to 3° above normal along the Carolina coasts. A southward push of cool, Canadian air into the central Great Plains, the Great Lakes, and the Northeast early in the week, and over the northern Great Plains and the Great Lakes late in the week left temperature departures 3° to more than 6° below normal. Several new low temperature marks for specific dates were set in the central Great Lakes region. Above-normal cloudiness and widespread precipitation in the west Gulf States late in the week also brought temperatures sharply below normal.

Scattered showers and thundershowers in the Pacific Northwest, the southern Plateau, and most of the Rockies and northern Great Plains brought generally light precipitation. Some local areas were favored by generous rainfall, however, including Tucumcari, New Mexico, where 3.24 inches fell Tuesday night. Dry thunderstorms were again reported in many forest areas of the Western States. Moderate to locally heavy precipitation improved moisture conditions over the Southern States, portions of the central Great Plains, the Great Lakes region, and sections of the Middle and North Atlantic States. Heaviest totals over 4 inches, were reported from the central Appalachians, the central Great Plains, and from Texas coast inland over southern portions of the State. Port Arthur, Texas, with measurable rainfall every day, accumulated 10.22 inches during the week, and Corpus Christi 6.19 inches. Local occurrences of hail and high winds accompanied many of the thunderstorms in the Great Lakes, Great Plains, and northern Rockies, while several waterspouts and small tornadoes were observed near Tampa, Florida, Sunday, August 14. (Summary supplied by U. S. Weather Bureau).

WEATHER BUREAU 30-DAY OUTLOOK

MID-AUGUST TO MID-SEPTEMBER

1960

The Weather Bureau's 30-day outlook for the period from mid-August to mid-September calls for temperatures to average above seasonal normals in the eastern half of the United States, except near normal along northern and southern borders. In the western half of the Nation generally below normal temperatures are predicted, except above in the extreme southwest. Rainfall is expected to exceed normal in most of the country lying between the Rocky and Appalachian Mountains. Subnormal amounts are indicated in the Middle and South Atlantic States, and also in the Far West. In areas not specified, near normal precipitation is anticipated.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - SOUTH DAKOTA - Adult survey underway in northeast, north central and central areas. Very spotted infestation present. (Mast). WISCONSIN - Feeding noted in corn adjacent to alfalfa fields in Waushara and Portage Counties. Legumes and soybeans seriously injured in Pepin County. (Wis. Coop. Sur.). MISSOURI - Populations, mainly Melanoplus differentialis, ranged from 3 to as high as 35 adults and large nymphs per square yard in fence rows and field margins in southwest. Damage to alfalfa and to marginal rows of corn and grain sorghum observed in area. (Munson, Thomas, Wood). ARKANSAS - Heavier than usual in areas of northwest; controls may be needed in some areas. (Ark. Ins. Rpt.). OKLAHOMA - Populations in Payne County alfalfa fields ranged as high as 2 per sweep. On rangeland in Beckham County, counts 0-6 per square yard, while field margin counts were as high as 5-12 per square yard. Spotted infestations noted in Kingfisher and Beaver Counties. (Okla. Coop. Sur.). TEXAS - Moderate to heavy infestations in fence rows of cropland and soil bank land in Tom Green, Runnels, Taylor, Jones, Wilbarger, Wichita and Clay Counties. (Hawkins).

CRICKETS - MINNESOTA - High populations present in scattered areas in west central and northwest districts; very little damage to small grain and flax noted. (Minn. Ins. Rpt.). SOUTH DAKOTA - Acheta sp. abundant in nearly all alfalfa and soil bank fields in north central area. (Mast).

CORN EARWORM (Heliothis zea) - NEW JERSEY - Eggs and larvae not difficult to find in silk. (Ins.-Dis. Newsl., Aug. 9). NEW YORK - Hatching became detectable in Hudson Valley in sweet corn about August 9 and by the August 11 invasion of silks by young larvae in unsprayed patches at Poughkeepsie and Lamontville ran around 10 to 20 percent. Rapidly increasing in Erie County. (N. Y. Wkly. Rpt.). GEORGIA - Causing serious damage to whorls of corn, millet and grain sorghum in Polk, Franklin and Hart Counties. Moderate damage to heads of grain sorghum in Jasper County. (Johnson). ILLINOIS - Egg laying begun in central section; eggs being found on few silks. (Ill. Ins. Rpt.). MISSOURI - Infesting heads of grain sorghum in southwest and southeast. In fields where grain has begun to harden, counts ranged 4-20 larvae per 100 heads. (Munson, Thomas, Wood). MINNESOTA - Occasionally reported in market sweet corn. (Minn. Ins. Rpt.). OKLAHOMA - Light in young alfalfa (0.5 per sweep) in Tillman County and 0.1 per plant in sorghum in Payne County. Peanuts infested, 1.5 larvae per row foot, in field in Love County. (Okla. Coop. Sur.). UTAH - Infestations generally low, but occasional fields 3-8 percent "wormy" in Salt Lake County. (Knowlton).

FALL ARMYWORM (Laphygma frugiperda) - GEORGIA - Light to heavy defoliation of Bermuda grass, millet, grain sorghum and lawns general throughout most of State. (Johnson). ALABAMA - Continues to cause rather serious damage to forage crops, pastures and grain sorghum, particularly in central and southern areas. Some infestations noted in peanuts. Moderate infestations increasing in number in Geneva County. (Stephenson, Grimes). LOUISIANA - Counts 2,000 plus per 100 sweeps collected on pasture grass at Franklinton. First and second-instar larvae being collected in fields treated less than 2 weeks ago. No larvae collected in 10 fields of pasture grass in Red River, Bossier, Caddo, Sabine and De Soto Parishes. (Spink). TEXAS - Heavy infestation on sorghum in Brazos County; damage severe. (Sistrunk). ARIZONA - Infesting 15 percent of stalks in central area sorghum. (Ariz. Coop. Sur.). ARKANSAS - Outbreaks occurring on home lawns. (Ark. Ins. Rpt.). MISSOURI - Feeding on very late corn in west central and southwest areas; 3-10 percent of plants in infested fields showing feeding damage. (Munson, Thomas, Wood). ILLINOIS - Newly hatched larvae present in few late fields of northern area corn. (Ill. Ins. Rpt.). MARYLAND - Light infestations noted in corn and sorghum in Dorchester and Talbot Counties. Some moderate infestations appearing in late corn in Frederick County. (U. Md., Ent. Dept.).

ARMYWORM (Pseudaletia unipuncta) - MINNESOTA - Reported locally; destroyed field of oats in Goodhue County. (Minn. Ins. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW JERSEY - Young larvae feeding in whorls in southern counties. (Ins.-Dis. Newsl., Aug. 9). NEW YORK - Second-brood egg masses found on sweet corn in Hudson Valley. Between first and second broods in Erie County. (N. Y. Wkly. Rpt.). MARYLAND - Light in midseason and late corn in all sections. An occasional egg mass noted on late corn in Frederick, Prince Georges and Worcester Counties. (U. Md., Ent. Dept.). ILLINOIS - Egg mass counts ranged 0-20 per 100 plants in northern area late corn; pupation ranges 25-70 percent, with 50-60 percent of adults emerged. (Ill. Ins. Rpt.). MISSOURI - Some egg masses observed in west central area. In fields with green silks, 3-20 percent of plants had 3-10 first and second-instar larvae feeding at edge of leaf sheath. (Munson, Thomas, Wood). IOWA - Pupation, emergence and oviposition indicate second brood will be considerably larger than in 1959, particularly in west central area. Fresh egg masses observed in Missouri Valley area August 5; stalk dissections in area indicate peak moth flight about August 15; second-brood moths laying many more eggs than in 1959. No second-brood eggs found in Boone County, but averaged 3 masses per 100 plants at Ankeny. In Boone County, 8 percent of larvae in fifth instar, 56 percent pupae and 36 percent emerged. (Iowa Ins. Inf., Aug. 8). WISCONSIN - Oviposition on corn expected to appear soon in southern counties. (Wis. Coop. Sur.). MINNESOTA - Emergence of second generation not noted. (Minn. Ins. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - OKLAHOMA - Second-generation moths began emergence during past week in Payne County. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Causing considerable damage to peanuts in southeastern area in association with Feltia subterranea. (Grimes).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Completed first generation in southern half of State; counts of larvae and pupae ranged 0-30 per 100 heads. (Munson, Thomas, Wood).

BLUEGRASS WEBWORM (Crambus teterrellus) - NEW MEXICO - Causing extensive damage to Bermuda grass lawns in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt., Aug. 5).

SORGHUM MIDGE (Contarinia sorghicola) - MISSOURI - Severe damage noted in scattered fields in southeast. In one field, heads almost completely devoid of grain. (Munson, Thomas, Wood). TEXAS - Medium widespread infestations on grain sorghum in Uvalde County. (Prucia).

CORN LEAF APHID (Rhopalosiphum maidis) - WYOMING - Apterous forms found in 2 fields of sorghum in Wheatland area, Platte County. (Fullerton). MINNESOTA - No increase noted. (Minn. Ins. Rpt.). IOWA - Abundant in many late-planted fields. (Iowa Ins. Inf., Aug. 8). ILLINOIS - Infestations range 0-70 percent of plants in early fields heavily infested; 5-10 percent infestations common. (Ill. Ins. Rpt.). OHIO - Of minor consequence in Harding County. (Basinger). Generally of minor importance in State. (Blair, Holdsworth). NEW YORK - Becoming conspicuous in sweet corn in Hudson Valley and considerable amount present in Erie County. (N. Y. Wkly. Rpt.). DELAWARE - Alate forms continue to disperse in field and sweet corn over State. (Burbutis, Mason). MARYLAND - Light to moderate on field corn in sections of Dorchester and Frederick Counties. (U. Md., Ent. Dept.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - NEVADA - Heavy infestation in field of wheat in Orovada, Humboldt County; field less advanced in maturity than other fields in area; treatments applied. (Doner).

RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Adults ranged 0-57 and averaged 19 per 100 sweeps in 17 rice fields in St. Landry Parish. Nymphs ranged 0-54 and averaged 9 per 100 sweeps in same fields. An average of 25 per 10 sweeps present in rice in Acadia Parish. (Spink).



STINK BUGS - ARIZONA - Euschistus impictiventris and Chlorochroa sayi heavy and infesting Cochise County sorghum. In other areas, infestations light to medium. (Ariz. Coop. Sur.).

CHINCH BUG (Blissus leucopterus) - OHIO - Damaging in 2 fields of corn. (Blair).

FALSE CHINCH BUGS (Nysius spp.) - MISSOURI - Observed in heads of grain sorghum in southeast; counts in heads in marginal rows ranged 20-30 per head. (Munson, Thomas, Wood).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Continues abundant on late corn in Frederick County. (U. Md., Ent. Dept.).

SAP BEETLES - UTAH - Entering 5-10 percent of corn ears in some Salt Lake County patches. One-half of infestations in ears of corn infested at Salt Lake in ears not infested with Heliothis zea. (Knowlton). MARYLAND - Carpophilus spp. abundant and widespread in maturing ears of corn. (U. Md., Ent. Dept.).

THRIPS - MARYLAND - Abundant and injurious to lower leaves of late corn in Frederick County. (U. Md., Ent. Dept.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WYOMING - Infesting some corn in Wheatland area, Platte County. (Fullerton). COLORADO - Populations reaching economic damage levels on corn in eastern area. Hot, dry weather intensifying problem. (Colo. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Averaged 3-5 per sweep in Fallon-Stillwater area, Churchill County; none found in Pershing County fields checked. (Parker). TEXAS - Averaged over 100 per sweep in 3 alfalfa fields checked in Deaf Smith County. (Russell, Tapscott). OKLAHOMA - Counts in southwest ranged 5-35 per sweep. Populations generally somewhat higher in fields in northern area; 10-20 per sweep. (Okla. Coop. Sur.). MISSOURI - Some damage to spring-seeded alfalfa in southwest; counts ranged 0 to over 100 per sweep, averaged 20 per sweep. (Munson, Thomas, Wood).

PEA APHID (Macrosiphum pisi) - NEVADA - Averaged 2-3 to 5-10 per sweep in Lovelock, Pershing County, and Fallon-Stillwater area, Churchill County. (Parker). IDAHO - Becoming very abundant in both second-crop hay and seed alfalfa fields and a few red clover fields in southwest. Numbers ranging up to one-half cupful per sweep not uncommon. Many fields treated and many more will be treated. (Waters). WYOMING - Averaged 30 per sweep in alfalfa in Albany and Platte Counties. (Fullerton). TEXAS - Averaged 50 per sweep in 3 alfalfa fields checked in Deaf Smith County. (Russell, Tapscott). DELAWARE - Heavy buildup in alfalfa locally in New Castle County; 250-300 per sweep. Counts generally 5 per sweep or below. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Counts high in alfalfa statewide; averaging 15-30 per 10 sweeps. (Ariz. Coop. Sur.). UTAH - Numerous locally in Washington County in alfalfa fields and orchards. (Knowlton). OKLAHOMA - Light in north central area and moderate in south central and southwest areas; counts ranged 1-1.5 per sweep. (Okla. Coop. Sur.). LOUISIANA - Counts 1 per sweep in soybeans in East Baton Rouge Parish and averaged 122 per 100 sweeps in 2 fields of alfalfa in Bossier Parish. Medium in soybeans in St. Landry Parish. (Spink).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Ranged 6-18 per sweep in alfalfa in Howard County and 5-25 per sweep on alfalfa in Frederick County. (U. Md., Ent. Dept.).

LYGUS BUGS (Lygus spp.) - NEVADA - Averaged 20-50 per sweep in alfalfa in Lovelock, Pershing County, and 3-5 to 30-50 in Fallon-Stillwater area, Churchill County. (Parker). ARIZONA - Counts remain very high in alfalfa statewide. (Ariz. Coop. Sur.). NEW MEXICO - Have been a serious problem in seed alfalfa fields in State.

Almost all growers have treated. (N. M. Coop. Rpt.). WYOMING - Adults averaged 7 per sweep and nymphs 3 per sweep in alfalfa in Albany and Platte Counties. (Fullerton). MARYLAND - L. lineolaris adults and nymphs light to moderate on alfalfa and clover in all sections. (U. Md., Ent. Dept.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - SOUTH DAKOTA - Averaged 10-32 per sweep in alfalfa in northeast, north central and central areas. (Mast).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ILLINOIS - Adults common on soybeans throughout State; occasional reports of 25 percent defoliation. (Ill. Ins. Rpt.). INDIANA - Newly emerged adults becoming common in soybean fields in Newton and Tippecanoe Counties. (Gould). MISSOURI - Counts in soybeans in southeast ranged 0-4 beetles per foot of row. (Munson, Thomas, Wood). DELAWARE - Causing moderate feeding injury in 2 soybean fields in Sussex County. (Burbutis, Mason).

BLISTER BEETLES (Epicauta spp.) - DELAWARE - Epicauta sp. and E. pestifera damaging soybeans; feeding injury moderately heavy locally in New Castle County and moderate locally in Sussex County. (Burbutis, Mason). SOUTH DAKOTA - E. pennsylvanica found in very large numbers in north central area; counts ranged as high as 21 per sweep in weedy soil bank land. (Mast). TEXAS - Epicauta sp. caused severe damage to young alfalfa in Brazos River bottom of Burleson County. (Doering).

LOCUST LEAF MINER (Chalepus dorsalis) - OHIO - Caused considerable foliage damage in 24 acres of soybeans in Montgomery County. Damage by this pest unusual, but not rare. Previously reported from western area in 1946 and 1948. (Blair, Holdsworth).

COWPEA CURCULIO (Chalcodermus aeneus) - NORTH CAROLINA - Causing up to 31 punctures per pod on field peas in some areas of Wake County. (Jones, Farrier).

CLOVER SEED CHALCID (Bruchophagus gibbus) - CALIFORNIA - Has reached an all season peak with heavy populations on red clover, generally lower on alfalfa and low with little damage to trefoil. Now in third generation. Damage to alfalfa less than in 1959. (F. E. Strong, Aug. 5).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ARKANSAS - Found in Forrest City, St. Francis County, and in Paragould, Greene County. Eradication treatments applied. (Ark. Ins. Rpt.).

A WEBWORM (Loxostege sp.) - OKLAHOMA - Infestations in alfalfa increasing in south central area; remains about 1 per sweep in north central area. (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - ILLINOIS - Small larvae in most fields of soybeans, but in small numbers. (Ill. Ins. Rpt.). DELAWARE - Larvae increasing on soybeans; average 5-7 per 10 sweeps. (Burbutis, Mason).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - ARIZONA - Infestations increasing in alfalfa statewide. Larval counts average 1-3 per 10 sweeps and adult activity around fields heavy. (Ariz. Coop. Sur.). WYOMING - Larvae averaged 6 per 25 sweeps in alfalfa in Platte County. (Fullerton). MARYLAND - Larvae 5-21 per 50 sweeps in alfalfa in Frederick County. (U. Md., Ent. Dept.).

FRUIT INSECTS

CODLING MOTH (Capocapsa pomonella) - NEW YORK - Activity remains very low in Niagara County, but has been of commercial importance in many Monroe County orchards this season. A number of stings and entries were noted in Orleans County where control intervals were too great. (N. Y. Wkly. Rpt.). INDIANA - Light, with little activity in most commercial orchards in Vincennes area. New entries, probably late second brood, readily found in untreated orchards. (Hamilton, Aug. 8). ILLINOIS - Entries found in several orchards in Carbondale area August 9 and 10, indicating start of third brood. (Meyer, Aug. 10). WISCONSIN - Second-generation eggs hatched in Kenosha County. (Wis. Coop. Sur.). COLORADO - Continues to be caught in traps in Austin area, Delta County. (Colo. Ins. Sur.).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Very high adult numbers observed in untreated orchards during past week. Growers urged to continue controls. (Minn. Ins. Rpt.). WISCONSIN - Adults now common in some sections of State. (Wis. Coop. Sur.). NEW YORK - Fly emergence dropped considerably by August 9 in Niagara County; 1 fly taken in each of 2 cages since that date and none since August 13. One seeding in Monroe County ceased activity August 8; others active, but not very steady. Appears under control in Orleans County. (N. Y. Wkly. Rpt.).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on apple trees in Rio Vista, Solano County. (Cal. Coop. Rpt.).

CONSPERSE STINK BUG (Euschistus conspersus) - CALIFORNIA - Heavy in Bartlett pear orchards and damaging fruit in Lakeport, Lake County. (Cal. Coop. Rpt.).

ORCHARD MITES - NEW YORK - Panonychus ulmi observed in some apple, peach and prune orchards in Niagara County and Tetranychus telarius building up on peaches. P. ulmi again serious in some Monroe County orchards; T. telarius increasing in Orleans County. (N. Y. Wkly. Rpt.). NEW JERSEY - Unspecified species continue a problem in some apple blocks. (Ins.-Dis. Newsl., Aug. 9). GEORGIA - Infestations heavy on peach trees in Ft. Valley area that received no controls during 1960. Infestation and buildup during dry weather has been greater than that of an average year. (Snapp). INDIANA - Continue number one problem on apple orchards in Vincennes area. T. telarius high in a few locations; T. canadensis also in a few orchards; P. ulmi remains troublesome in other orchards. Various species also active in peach orchards. (Hamilton, Aug. 8). Population pressure has subsided on apples in Orleans area and is not the threat on peaches that it was 2 weeks ago. (Marshall, Aug. 9). ILLINOIS - P. ulmi problems have dropped off sharply in Carbondale area, but several high populations of T. canadensis were found August 10. Mite damage to peaches in same area, primarily by P. ulmi, is higher than normally. (Meyer, Aug. 10). WISCONSIN - P. ulmi building up in some orchards in Door County. (Wis. Coop. Sur.). COLORADO - T. telarius damage in Mesa and Delta Counties great enough to require controls. (Colo. Ins. Sur.). CALIFORNIA - Eotetranychus lewisi heavy on peach trees in Fullerton, Orange County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - ILLINOIS - Newly wilted twigs being found in a few peach blocks in Carbondale area indicate new larvae present. (Meyer, Aug. 10). INDIANA - Adults still appearing in bait traps in Vincennes area. Twig injury by second brood severe enough in several orchards to warrant protection for third-brood larvae on Elberta and late peach varieties. (Hamilton, Aug. 8). GEORGIA - Caused more damage to the Georgia peach crop this year than usual. (Snapp). NEW YORK - Very few adults taken in Niagara County bait traps August 6 and 12. (N. Y. Wkly. Rpt.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single female trapped in Anaheim, Orange County; taken in McPhail trap baited with SPIB-7, hung in orange tree in citrus grove during week of August 6. Collected by Chester Johnson. Det. by George Okumura. Source of fly unknown. Additional traps being placed in

25-square-mile area surrounding property to determine degree and extent of infestation. Intensive cooperative trapping over large area will be put into operation to supplement several thousand fruit fly traps annually operated in detection program in State. This is a first record for the continental United States. (Cal. Coop. Rpt.).

PEACH TWIG BORER (Anarsia lineatella) - CALIFORNIA - Caused heavy damage to peach fruit in San Mateo, San Mateo County. (Cal. Coop. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - GEORGIA - Peach harvest completed with very good control throughout season. Post-harvest control treatments not justified this year. (Snapp). OKLAHOMA - Thirty percent infestation of larvae in peaches in Marshall County. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - CALIFORNIA - Heavy on black walnut in Paradise, Butte County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Reported for first time this year from Cotton County; further appearance reported in Jefferson County. (Okla. Coop. Sur.).

BLACK PECAN APHID (Melanocallis caryaefoliae) - OKLAHOMA - Moderate infestations reported from Jefferson and Carter Counties. (Okla. Coop. Sur.).

YUMA SPIDER MITE (Eotetranychus yumensis) - ARIZONA - Medium to heavy infestations damaging lemon trees on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

GRAPE BERRY MOTH (Paralobesia viteana) - ARKANSAS - Active in 30-40 percent of vineyards. (Ark. Ins. Rpt.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEVADA - An additional 6 infested properties found in Twin Lakes area of Las Vegas, Clark County, where initial discovery was made in 1959. (Zoller).

#### TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Very heavy in some pepper fields in Sussex County; range 400-800 per 25 leaves. (Burbutis, Mason). MARYLAND - Continues a serious problem in some areas; populations generally reduced by hot weather and heavy rains. (U. Md., Ent. Dept.). UTAH - Generally scarce on potatoes in Magna and Murray, Salt Lake County. (Knowlton). IDAHO - Increasing in potato seed fields in Caribou and Butte Counties. (Bishop).

Potato Aphids in Maine - Overall numbers on untreated potatoes little changed from previous week. POTATO APHID (Macrosiphum euphorbiae)\* still predominates, but only slightly more abundant than BUCKTHORN APHID (Aphis nasturtii). GREEN PEACH APHID (Myzus persicae) remained about constant, while FOXGLOVE APHID (Myzus solani) decreased sharply. Parasitized and dead M. euphorbiae substantially more abundant than in previous week. Two reports of large aphid populations and severe feeding damage in several commercial plantings. Fall migrations of A. nasturtii began August 11-12; 2-3 days earlier than usual. (Shands).

APHIDS (unspecified species) - COLORADO - Continue to increase in untreated or poorly treated fields of potatoes in Weld County; averaging over 1,000 per 100 sweeps in some fields. Leaf counts were 6.72 per 10 leaves in untreated fields, 1.49 in treated fields. Averaged 100 per 100 sweeps in Montrose County. (Colo. Ins. Sur.). MASSACHUSETTS - Continue a problem on tomatoes, vine crops, peppers and cole crops. (Crop Pest Cont. Mess.).

\* Russell, L. M. 1960. U. S. Dept. Agr., ARS-33-59, 8 pp. July.

POTATO LEAFHOPPER (Empoasca fabae) - SOUTH DAKOTA - Populations increasing on potatoes in eastern area; 6 per sweep common. No damage observed. (Mast). DELAWARE - Adults remain common on lima beans in all counties and on carrots in New Castle County. (Burbutis, Mason).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Populations and damage of summer-generation adults unusually light on treated and untreated potatoes in vicinity of Presque Isle. No reports of damaging numbers or damage received. (Shands).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - SOUTH DAKOTA - Averaged 1 per 10 sweeps on potatoes in Brookings County. (Mast).

BLISTER BEETLES (Epicauta spp.) - ALABAMA - Defoliated tomatoes in Clay County. (Barwood). MARYLAND - Injuring tomatoes and potatoes at several localities over State. (U. Md., Ent. Dept.). INDIANA - Blister beetles, especially E. pestifera, causing severe damage to tomatoes and potatoes in gardens. (Gould). RHODE ISLAND - Reinfestations of E. pestifera in gardens causing concern in South Kingstown and Narragansett. (Hansen, Aug. 10).

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Larvae caused serious injury to large tomato planting in Worcester County. (U. Md., Ent. Dept.). DELAWARE - Larvae common on peppers in some areas of Sussex County, causing moderate injury; averaged 3 per plant in field of tomatoes in same county. Averaged 4 larvae per 10 sweeps in field of carrots in New Castle County and abundant on small seedling cauliflower and cabbage planting in same county. (Burbutis, Mason).

HORNWORMS (Protoparce spp.) - ALABAMA - Defoliating tomatoes in Coosa County. (Barwood).

THRIPS - IDAHO - Unspecified species injuring lower leaves of potato plants in many parts of southeastern section; particularly abundant in Caribou County. (Bishop). UTAH - Thrips tabaci causing moderate to severe damage in northern counties. (Knowlton).

SQUASH VINE BORER (Melittia cucurbitae) - WISCONSIN - Heavy in squash in many home gardens in Madison area. (Wis. Coop. Sur.).

BEAN APHID (Aphis fabae) - OREGON - Economic numbers present in Willamette Valley. (Arias).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Eggs and adults abundant. Larvae causing light to heavy feeding injury to beans locally. (Burbutis, Mason). WYOMING - Larvae averaged 4 per 100 plants in beans in Platte County. (Fullerton).

MITES - NEW JERSEY - Unspecified species heavy on beans in Cape May County where no controls applied. (Ins.-Dis. Newsl., Aug. 9).

BEET WEBWORM (Loxostege sticticalis) - MINNESOTA - Small numbers of second-brood larvae appearing in Red River Valley. (Minn. Ins. Rpt.). COLORADO - Light trap collections indicate heavy adult flights in Weld County; 2,180 collected July 26, 1,158 on July 28. (Colo. Ins. Sur.). WYOMING - Larvae averaged 4 per 100 plants in sugar beet fields sampled in Platte County. (Fullerton). UTAH - Moth counts remain lower than normal at light traps at Logan, Ogden, Benjamin and Salem, in northern and central areas. (Knowlton).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Heavy adult infestations continue on sweetpotatoes in Acadia and St. Landry Parishes. (Spink).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Populations increasing in light trap samples in Weld County. No aster yellows definitely identified. (Colo. Ins. Sur.). DELAWARE - Adults common on carrots in New Castle County; average 1 per sweep. (Burbutis, Mason).

STRAWBERRY LEAF ROLLER (Ancylis comptana frageriae) - INDIANA - Building up in some instances in Orleans area. (Marshall, Aug. 9).

CYCLAMEN MITE (Steneotarsonemus pallidus) - OREGON - Populations in Willamette Valley strawberry fields extremely low in early August. (Rosentiel).

A MINT APHID (Phorodon menthae) - OREGON - Aphids on mint at Madras, Jefferson County, have been determined as this species and Myzus persicae by M. D. Leonard. (Morrison).

#### TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Populations now at highest peak of season. (U. Md., Ent. Dept.).

HORNWORMS (Protoparce spp.) - MARYLAND - Small larvae on tobacco range light to moderate in Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Not as serious on tobacco this season as in recent years. (U. Md., Ent. Dept.).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Third-generation weevils becoming numerous in Coastal Plain and migration underway in many counties in area. (Cott. Lett., Aug. 9). GEORGIA - Square counts in 46 middle and northern area cotton fields averaged 44 percent punctured squares. (Milner, Johnson). ALABAMA - Infestations ranged 1-72 percent in treated cotton; highest infestations in maturing cotton, with relatively few squares. (Grimes). TENNESSEE - Buildup conditions ideal; infestations heavier in rank, late cotton in western area. Local migration taking place. Counts in infested fields in southern tier of counties averaged 23 percent, compared with 11 percent previous week. Migrations to noninfested counties expected during latter part of August. (Locke). MISSOURI - Total of 89 of 865 fields scouted infested; percent punctured squares and bolls ranged 0-25. (Munson, Thomas, Wood). ARKANSAS - Third-generation weevils emerging in some fields; second-generation emergence general. Some high counts recorded, but weevil pressure is not too great. Total of 3,676 fields treated of 6,753 scouted. (Ark. Ins. Rpt.). MISSISSIPPI - Infestations generally low over delta area. Local migration from "hot spots" common. Infestations increasing in many fields, due to reduced fruiting. Weevil activity expected to increase following recent rains. (Merkl et al.). LOUISIANA - Infestation averaged 8 percent in Tallulah area. Infestations expected to increase following recent rains. Very little indication of migration at present. (Smith et al.). OKLAHOMA - Infestations highly variable, even in localized areas. Lowest populations reported from north central area where counts ranged 3-6 percent in Payne County. Most infestations in southwest averaged 10 percent in Jackson, Greer, Tillman and Beckham Counties. Infestations ranged up to 48 percent in south central area. All counts in southeast exceeded 30 percent infestation. (Okla. Coop. Sur.). TEXAS - Infestations continue heavy in untreated or poorly treated late-fruiting fields in McLennan and Falls Counties. Infestation averaged 38.7 percent. (Parenacia, Cowan, Davis).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Infestations remain light, although considerable numbers of adults and eggs found in fields. Increased activity noted mostly in central counties and upper Piedmont. (Cott. Lett., Aug. 9). GEORGIA - Egg counts in 46 middle and northern area cotton fields averaged 71 per 100 terminals. Larval counts averaged 9 per 100 terminals. (Milner, Johnson). Heavy infestation in mature bolls in Elbert County. (Johnson). ALABAMA - Moderate infestations reported. (Grimes). MISSISSIPPI - Moth activity high in delta counties. Infestation counts extremely variable. In general,

irrigated and succulent cotton requires treatments. Eggs range 0-80 and larvae 0-25 per 100 terminals. Egg deposition heavy on squares and blooms. (Merkel et al.). TENNESSEE - Continue to cause damage over western area, but not increasing. Predators controlling infestations in nontreated fields. (Locke). MISSOURI - Total of 438 of 865 fields scouted infested with 0-12 eggs and 0-13 larvae per 100 terminals. (Munson, Thomas, Wood). ARKANSAS - Fourth-generation moths emerging in large numbers. Egg and larval counts considerably higher than previous week. Total of 1,132 fields treated of 6,753 scouted. (Ark. Ins. Rpt.). LOUISIANA - Square infestation averaged 5 percent in Tallulah area. More of a problem than boll weevil during past 10 days. Eggs averaged 5.55 and larvae 2.77 per 100 terminals. Egg counts increasing rapidly in some fields and are expected to be general during week ending August 19. (Smith et al.). OKLAHOMA - Populations continue to climb wherever cotton remained attractive to moths. In southeast, infestations lighter; 5-6 percent. In north central area, counts averaged 9 percent. In south central area, populations down slightly; ranging 1-14 percent infestation. Infestation counts continue high in southwest; up to 21 percent. (Okla. Coop. Sur.). TEXAS - Injurious infestations continued in succulent fields in McLennan and Falls Counties. (Parenchia, Cowan, Davis). NEW MEXICO - Light to moderate in southern Dona Ana County cotton; average 4-6 eggs per 100 stalks in many fields. (N. M. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Continues to defoliate cotton in Allendale, Florence, Lee and Sumter Counties. (Cott. Lett., Aug. 9). GEORGIA - Light infestations on cotton in Oconee, Jasper, Butts, Spalding, Coweta, Polk, Floyd, Gordon, Bartow, Hart, Elbert and Washington Counties. (Milner, Johnson). ALABAMA - Damage to cotton moderate to severe in several areas. (Grimes). Caused considerable damage in Tallapoosa County. (Barwood). LOUISIANA - "Ragging" of cotton being reported in Tallulah area. (Smith et al.). ARKANSAS - Building up in some fields. (Ark. Ins. Rpt.). OKLAHOMA - Infestations low in all cotton-growing areas; ranging 0-2 per 100 plants examined. (Okla. Coop. Sur.). TEXAS Sufficiently heavy to cause considerable "ragging" of leaves in many cotton fields in McLennan and Falls Counties. (Parenchia, Cowan, Davis). NEW MEXICO - Heavy infestations damaging cotton fields in northern Dona Ana County. Eggs becoming very numerous in fields in southern Dona Ana County; averaging about 1-4 per stalk. Very light infestations in Chaves County. (N. M. Coop. Rpt.).

A LOOPER - NORTH CAROLINA - An undetermined species "ragging" cotton leaves in Robeson and Scotland Counties. (Jones).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - One larva collected from hibiscus bloom at Plantation Key, Monroe County, on August 2. Det. W. Breidenbach. (Todd). TEXAS - Number of moths trapped in light trap at Brownsville was 3,871 during period August 2-5 and 18,011 during period August 9-11. (Texas Coop. Rpt.). NEVADA - Light trap surveys negative to date in Pahrump Valley, Nye County. (Parker, Zoller).

COTTON LEAFWORM (Alabama argillacea) - TEXAS - Few moths collected at light traps in Waco area; several larvae collected in field in western McLennan County on August 9. One infestation in Coryell County sufficiently heavy to require control. (Parenchia, Cowan, Davis).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Infestations continue to require control in some areas of Pinal and Pima Counties. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Infestations becoming heavy in Yuma County; averaging as many as 20-30 larvae per leaf. Counts also increased in some Pinal County fields. In Maricopa County, light infestations appearing and large numbers of moths present in fields. (Ariz. Coop. Sur.).

COTTON SQUARE BORER (Strymon melinus) - OKLAHOMA - Reported occasionally in southwest (4 percent infestation) and substantially less in south central area, 0.1 percent. (Okla. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - GEORGIA - Completely defoliated grass in field of cotton in Elbert County and feeding on foliage and grown bolls near bottom of plant. (Johnson).

APHIDS - SOUTH CAROLINA - Building up in cotton in Greenwood, Marlboro, Spartanburg and York Counties. (Cott. Lett., Aug. 9). GEORGIA - Aphis gossypii light to moderate in Oconee, Morgan, Jasper, Butts, Spalding, Coweta, Polk, Floyd, Gordon, Bartow, Hart, Elbert and Washington Counties. (Milner, Johnson).

FLEAHOPPERS - MISSOURI - Total of 715 of 865 fields scouted infested with 0-24 per 100 terminals. (Munson, Thomas, Wood). ARIZONA - Psallus seriatus infestations increased greatly in Maricopa and Pinal County cotton. Counts run as high as 150 adults and nymphs per 100 sweeps. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Nymphs building up in southern Dona Ana County cotton fields. Adults and nymphs averaged about 20 per 100 sweeps. (N. M. Coop. Rpt.). ARIZONA - Counts remain high in untreated fields in central and southwestern areas; averaging 20-40 per 100 sweeps, with 45-60 percent punctured squares. Counts in Cochise and Graham Counties average 12-15 per 100 sweeps. (Ariz. Coop. Sur.).

A CICADA (Tibicen sp.) - ARIZONA - Infestations damaging cotton in Bullhead City area of Mojave County; populations very high in area. (Ariz. Coop. Sur.).

SPIDER MITES - SOUTH CAROLINA - A noticeable increase in infestations reported from upper Coastal Plain and upper Piedmont counties. (Cott. Lett., Aug. 9). GEORGIA - Light to moderate on cotton in Oconee, Morgan, Jasper, Butts, Spalding, Coweta, Polk, Floyd, Gordon, Bartow, Hart, Elbert and Washington Counties. (Milner, Johnson). TENNESSEE - Continue to increase and causing considerable damage over western area. Most infestations spotted and found along margins of cotton fields. Several species present. (Locke). MISSISSIPPI - Damaging infestations in some fields in delta counties. Light infestations general over area. (Merkl et al.). NEW MEXICO - Field near Rincon, Dona Ana County, heavily infested. (N. M. Coop. Rpt.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - During July, a total of 111 new spots were detected. This is 126 fewer spots than June total of 237. Control on 156 areas, but 144 areas still lacked control at end of July. (Young).

LARCH SAWFLY (Pristiphora erichsonii) - MINNESOTA - Defoliation of tamarack continued again this season. Heavy to complete defoliation in several stands in Pine County and heavy defoliation in many stands in all northeastern counties. Feeding now almost completed for season and late-maturing larvae show high degree of parasitism. (Minn. Ins. Rpt.).

SAWFLIES - MINNESOTA - Neodiprion lecontei in widely scattered infestations on jack pine in Crow Wing, Cass, Itasca and St. Louis Counties. Third to fifth instars most noticeable on leaders and upper branches of jack pine plantations. Diprion similis early instars present in small numbers. (Minn. Ins. Rpt.).

WISCONSIN - Nearly mature larvae of Croesus latitarsus feeding on white birch in Dane and Columbia Counties. (Wis. Coop. Sur.). TEXAS - An undetermined pine sawfly appearing again in Polk County. First-generation attack. Heavy defoliation of pine; 7-12 inches in diameter. (Young). NEW YORK - A sawfly on pin oak caused skeletonizing in Cattaraugus County on August 10. Only larvae found. (N. Y. Wkly. Rpt.). DELAWARE - Young larvae of Nematus ventralis abundant on willows in central Kent County. (Burbutis, Mason). MARYLAND - Neurotoma inconspicua moderately injuring wild cherry in some localities in Baltimore and Howard Counties. (U. Md., Ent. Dept.).



PINE BARK APHID (Pineus strobi) - MINNESOTA - Lightly scattered on small white pines in Carlton and northeast Pine Counties. (Minn. Ins. Rpt.).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - ALABAMA - Heavy infestations in young pines. (Guyton).

SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - Defoliation of balsam-spruce type over the northeastern counties of Cook, Lake, St. Louis and Koochiching continued again this year with increased intensity. Tree mortality very noticeable in many sites throughout the area. (Minn. Ins. Rpt.).

FALL WEBWORM (Hyphantria cunea) - MASSACHUSETTS - Nests enclosing leaves on 1 or more terminals now conspicuous on many trees and some shrubs. (Wheeler, Aug. 9). INDIANA - Abundant on sweetgum and hickory along Ohio River in Floyd, Perry and Spencer Counties. (Schuder). MINNESOTA - On oaks in Aitkin County. (Minn. Ins. Rpt.). WISCONSIN - Abundant in Endeavor area of Marquette County. (Wis. Coop. Sur.). NEW MEXICO - Damaging foliage of poplar, native walnut and apple trees in Hondo area, Lincoln County. (N. M. Coop. Rpt.).

NOTODONTIDS (Datana spp.) - MARYLAND - Numerous clusters of larvae feeding on oak at Easton and pecan in Kent and St. Marys Counties. (U. Md., Ent. Dept.).

SOLITARY OAK LEAF MINER (Cameraria hamadryadella) - RHODE ISLAND - Very light local infestations observed; virtually absent in some areas heavily infested during 1959. (Hansen, Kerr; Aug. 10). MASSACHUSETTS - Damage very conspicuous in some areas on some trees. Around Amherst, Hampshire County, individual trees vary greatly with respect to amount of damage. (Wheeler, Aug. 9).

A STENOMID (Stenoma humilis) - TEXAS - Heavy infestations in live and water oak trees in College Station area. (Garner).

PANDORA MOTH (Coloradia pandora) - WYOMING - Light amount of eggs in relation to amount of adults which emerged this year. (For. Serv.).

A WEEVIL (Thysanocnemis sp.) - ILLINOIS - Eggs, larvae and adults abundant on seeds of blue ash in McLean County. (Ill. Ins. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - INDIANA - Second-generation adults emerging in large numbers in Indianapolis and Lafayette. (Schuder). GEORGIA - Moderate to heavy on mimosa in Taylor County; new county record. (Robertson).

MITES - MARYLAND - Panonychus ulmi abundant and injuring several American elms at College Park. An undetermined eriophyid mite heavy and injuring several American elms in same area. (U. Md., Ent. Dept.). DELAWARE - An undetermined spider mite rather heavy on hemlocks in Wilmington area of New Castle County. (Kelsey). CALIFORNIA - Heavy populations of a new species of Aceria on Cucurbita foetidissima in Olinda and west Yorba Linda, Orange County. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - CALIFORNIA - Heavy infestations on elms in the Bishop and Lone Pine areas and light in Independence and Bigpine areas of Inyo County for the second consecutive year. (Cal. Coop. Rpt.). NEVADA - Damage has been very heavy during 1960 where no or inadequate controls undertaken. Many trees completely defoliated; others rapidly losing leaves. (Coop. Rpt.). UTAH - Damage has increased in several areas of Weber and Salt Lake Counties. (Knowlton). COLORADO - Numerous and causing damage at Grand Junction, Mesa County. (Colo. Ins. Sur.). OKLAHOMA - Continued damage statewide beginning to slacken, due to pupation. First report of infestation from Major County. (Okla. Coop. Sur.).

ELM LEAF APHID (Myzocallis ulmifolii) - MARYLAND - Caused serious injury to American elms at College Park. (U. Md., Ent. Dept.).

ALDER FLEA BEETLE (Altica ambiens) - CALIFORNIA - Heavy defoliation of alders in the Camino area, El Dorado County. Trees 6-16 inches in diameter in groups of 20 affected. (W. P. Maguire).

A BARK BEETLE (Phloeosinus sp.) - IOWA - Defoliating a juniper planting in Sac County. (Iowa Ins. Inf.).

A SESIID (Paranthrene robiniae) - CALIFORNIA - Heavy damage to Lombardy poplars in Millbrae, San Mateo County. (Cal. Coop. Rpt.).

A PSYLLID (Trioza alacris) - CALIFORNIA - Heavy populations on laurel trees in Palo Alto, Santa Clara County. (Cal. Coop. Rpt.).

A LEAF MINER (probably Profenusa canadensis) - WISCONSIN - Noticeable damage to hawthorn foliage, especially Crataegus crusgalli. (Wis. Coop. Sur.)

A SCALE INSECT (Ceroplastes ceriferus) - ALABAMA - Attacking ornamental plants in nurseries in vicinity of Montgomery. Infestation hard to control. (Livingston).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Continued defoliation of evergreens statewide where treatments ineffective. Loss of infested shrubs not uncommon in Stillwater area. (Okla. Coop. Sur.).

APPLE CURCULIO (Tachypterellus quadrigibbus) - ILLINOIS - Moderately abundant on Crataegus sp. (hawthorn) in McLean County. (Ill. Ins. Rpt.).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - MARYLAND - A severe outbreak of Aedes sollicitans occurred on lower Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Anopheles quadrimaculatus was the most frequently found species in an artificial resting box at Bombay Hook Refuge, August 8-11. Culiseta melanura totaled 10 specimens. On August 10, 3 other boxes in 3 different localities contained some C. melanura. (Burbutis, Mason). NORTH CAROLINA - A. sollicitans abundant in Brunswick County. (Ashton). Local residents unable to work without mosquito protectants in same county. (Farrier). Psorophora confinnis abundant in Brunswick County and Culex pipiens quinquefasciatus abundant in Edgecombe County. (Ashton). WISCONSIN - Numerous mosquitoes, but weather has kept them in check. Culex salinarius larvae found in permanent water in Madison area. (Wis. Coop. Sur.). MINNESOTA - Aedes vexans made up 40 percent of all mosquitoes caught in light traps week ending August 6, and 39 percent of mosquito larval collections during same period. (Minn. Ins. Rpt.). UTAH - A few cases of mosquito-borne equine encephalitis reported in State from Weber, Utah and Box Elder Counties. Culex tarsalis is generally declining in north central districts. Undetermined species generally annoying in Cache County. A total of 800 acres treated in Box Elder County. (Knowlton). CALIFORNIA - Populations of Culex tarsalis and other species slightly lower this week in the coastal area, but all other areas in State generally higher. Red Bluff area of Tehama County showed a sharp rise. (Vect. Cont.).

FACE FLY (Musca autumnalis) - IOWA - Collected in Grundy, Clayton and Allamakee Counties for first time. (Iowa Ins. Inf.). ILLINOIS - Populations continue to increase; as many as 80 per head reported. Populations likely to become greater during next month. (Ill. Ins. Rpt.). INDIANA - Averaging 1-2 per animal in Dubois County; this is first observation this year in that area. In eastern area of State counts continue high; 30-50 per animal (head only). (Dobson). WISCONSIN - First of season taken in Dane County, July 11. (Wis. Coop. Sur.).

HORN FLY (Siphona irritans) - NEW MEXICO - Counts up to 1,000 per animal on untreated cattle in southern counties. (N. M. Coop. Rpt.). ALABAMA - Abundant on cattle in southern half of State. (Arant). OKLAHOMA - Infestations varied 50-250 to 500-1,200 per animal in 2 areas of the State. (Okla. Coop. Sur.). UTAH - Cattle commonly annoyed throughout State where control was not applied. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Infestations in Payne County about same level as week ending August 6. (Okla. Coop. Sur.). UTAH - Annoying about homes and farms in Davis County. (Knowlton).

HOUSE FLY (Musca domestica) - NEVADA - Increasing in Reno-Sparks area, Washoe County. (Coop. Rpt.). NORTH CAROLINA - Very annoying in Gaston County this year. (Wray). Appears to be more annoying in restaurants in the Coastal Plain and in motels than past years. (Farrier).

FLIES - WISCONSIN - House flies continue to build up over State, while horse flies and stable flies of primary concern in a few scattered counties. (Wis. Coop. Sur.). ARKANSAS - Biting fly populations on the increase, especially horn and horse flies. (Ark. Ins. Rpt.).

FLEAS - DELAWARE - Abundant on dogs and annoying in houses in Newark area of New Castle County. (Burbutis, Mason).

TICKS - GEORGIA - Unusually heavy on dogs in Fort Valley area. (Snapp).

#### STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - ARIZONA - One new infestation found in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

Stored-grain Insects in Lee County, Alabama - Very heavy infestations of ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) and RICE WEEVIL (Sitophilus oryza) reported in stored shelled corn. In feed rooms, infestations of YELLOW MEALWORM (Tenebrio molitor) adults were heavy and DARK MEALWORM (T. obscurus) larvae were light. No adults of dark mealworm were found. Light infestations of adults of MEAL MOTH (Pyralis farinalis), INDIAN-MEAL MOTH (Plodia interpunctella), ALMOND MOTH (Ephestia cautella) and an unidentified moth were also present. (Guyton).

Stored-grain Insects in Texas - Light infestation of GRANARY WEEVIL (Sitophilus granarius) observed in stored grain sorghum in Armstrong County. Medium infestations of SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) and FLAT GRAIN BEETLE (Cryptolestes pusillus) were found in stored milo in Knox County. (Texas Coop. Rpt.).

#### BENEFICIAL INSECTS

LADY BEETLES - COLORADO - Increasing numbers of Hippodamia spp. observed in potato and alfalfa fields heavily infested with aphids. (Colo. Ins. Sur.). WYOMING - Hippodamia sp. adults averaged 2 per 25 sweeps in alfalfa sampled in Platte County. (Fullerton). UTAH - Unspecified species very numerous in alfalfa in Box Elder, Weber, Davis, Salt Lake and Utah Counties, and reducing pea aphid infestations. (Knowlton). IDAHO - Numbers of miscellaneous species very high in few fields of alfalfa and red clover in southwest area of State; extremely variable, ranging 0.1-30 per sweep, depending on field sampled but not on present abundant aphid food supply. (Waters).

MELYRIDES - UTAH - Unspecified species extremely numerous in many alfalfa fields in Box Elder, Weber, Salt Lake, Davis and Utah Counties, reducing pea aphid populations in some cases. (Knowlton).

NABIDS (*Nabis* spp.) - IDAHO - Very abundant in most red clover and alfalfa; ranged from 1 to as high as 15 per sweep. (Waters). UTAH - *N. alternatus* extremely numerous in many Box Elder, Weber, Davis, Salt Lake and Utah County alfalfa fields; conspicuously aiding in reduction of pea aphid infestations in many instances. (Knowlton). WYOMING - Averaged 5 adults per 25 sweeps in fields sampled in Platte County. (Fullerton). COLORADO - *N. feris* increasing in aphid-infested fields of alfalfa and potatoes. (Colo. Ins. Sur.).

LACEWINGS (*Chrysopa* spp.) - COLORADO - Numbers increasing in alfalfa and potatoes heavily infested with aphids. (Colo. Ins. Sur.).

BIG-EYED BUGS (*Geocoris* spp.) - IDAHO - Ranged 1-5 per sweep in red clover and alfalfa in Canyon and Payette Counties. (Waters).

A FLOWER BUG (*Orius tricolor*) - UTAH - Adults and nymphs very numerous in many fields of alfalfa in Box Elder, Weber, Davis, Salt Lake and Utah Counties. Conspicuously reducing pea aphid infestations. (Knowlton).

SYRPHIDS - COLORADO - Observed in increasing numbers in fields of potatoes and alfalfa heavily infested with aphids. (Colo. Ins. Sur.). UTAH - Larvae very numerous in alfalfa in several counties; aiding in reduction of pea aphid populations in some instances. (Knowlton).

HONEY BEE (*Apis mellifera*) - SOUTH DAKOTA - Honey crop considered good for 1960. Honey bees very active in alfalfa during past week. (Mast).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (*Popillia japonica*) - Inspections continued at active airports in MAINE and VERMONT, with negative results. Single adult found at Grenier AFB, Manchester, NEW HAMPSHIRE, makes a total of 5 found at this location this season. No controls applied, as area of finds and numbers observed not considered hazardous to spread. Heavy concentrations continued at Concord, Keene and Walpole, New Hampshire. Foliage treatments applied by city of Concord to city-owned golf course. Populations continue heavy at airport at Palmer and at Otis AFB at Sandwich, MASSACHUSETTS; infestations ranged negative to medium at 34 other airfields checked in State. In RHODE ISLAND, infestations were light at airfields at Hillsboro (commercial), Quonset (Navy), Westerly (municipal) and at the U. S. Naval Training Station at Charleston; infestation is medium at Hoxsie Municipal field. Beetle populations ranged very light to medium at 11 fields checked in CONNECTICUT. All other airports in the area were negative. Controls applied at all airports where adults were found. Peak flight apparently passed and populations are slightly less at all points. Adult prevalence in NEW JERSEY area continued to decline. At points formerly heavily infested, some beetles were encountered on host plants, but few in flight. On basis of observations to date, plane treatments will be discontinued, pending final check at McGuire AFB and Teterboro Airport during week of August 15. In southeastern PENNSYLVANIA and Cumberland Valley, adults greatly decreased from peak emergence. Occasional beetles flying at Philadelphia International Airport around loading planes. Modified regulatory action continuing. In western area of State, adults are declining but still damaging to choice host plants. Regulatory measures continuing at Pittsburgh and elsewhere as necessary. Peak emergence reached in north-eastern Pennsylvania; infestation appears medium. In central section, infestation is medium to heavy in Williamsport area; peak emergence just past and infestation is heavier than in past years. (PPC).

Although few beetles are still present at Friendship Airport, Baltimore, and Andrews AFB, Camp Springs, MARYLAND, and New Castle County Airport, New Castle, DELAWARE, outlying fields remote from airfields remain heavily infested, especially corn and soybean crops. Beetles at all fields are at low ebb. Restrictions requiring aerosoling lifted August 11, with understanding that should beetles reappear, aerosoling would be required on individual flight basis. Populations declining rapidly in most sections of VIRGINIA; however, some feeding continues in Albemarle, Augusta, Hanover, Henrico, Spotsylvania and Stafford Counties. In southern Norfolk and Princess Anne Counties, previous heavy spot feeding in soybeans showing prominently, with leaf browning in many fields. Close examination showed very few beetles still active and feeding. Airport scouting negative at 10 of the principal airports in eastern part of State. Foliage treatments limited to spot applications at Patrick Henry Airport, Newport News, and Charlottesville Airport, Charlottesville. Aerosoling still required at private field near latter city. Beetles still present at National Airport, Washington, D. C., but few in numbers. Few beetles found at other airports in central section; no foliage treatments necessary. In southwestern produce areas of Virginia, regulatory treatment program around bean and cabbage fields in eastern Washington and Smyth Counties was discontinued. Regulatory scouting showed only moderate feeding in field corn and smartweed. A steady decline in population reported throughout infested sections of WEST VIRGINIA. Some beetles still feeding on low growth in valley areas, but in greatly reduced numbers. Foliage treatments at airports discontinued August 9. (PPC).

During the period June 29 to July 19, cooperative efforts by Federal and State agencies in airplane inspection in CALIFORNIA revealed unusual numbers of adults present in direct flight jet planes from eastern cities. Beetles were collected alive and dead from passenger and luggage compartments at International Airports at Los Angeles and San Francisco. No beetles were present on piston-type planes. During period June 29-July 4, a total of 129 beetles were taken, 80 of which were alive; during period July 4-15, an additional 173 beetles were taken, as many as 30 in 1 plane. Occurrence in planes stopped July 19. During the 3-week period, a total of 351 adults were intercepted. One live beetle was found at Ontario International Airport, California. Additional Japanese beetle traps were placed in all strategic locations at start of heavy influx, for a more thorough coverage in the detection program. Results of all trap inspections have been negative. (Cal. Coop. Rpt., PPC). At Portland, OREGON, 12 dead beetles were found during July (Capizzi, PPC), and 7 dead beetles were found at Seattle, WASHINGTON, during the month (Busdicker). During July, a total of 407 aircraft which originated or stopped at points of heavy infestation prior to arrival at airports in FLORIDA was inspected; 12 live, 24 dead and 2 moribund adults were recovered. (Fla. Coop. Sur.).

ASIATIC GARDEN BEETLE (Autoserica castanea) - CALIFORNIA - Intercepted on direct flight jet planes from eastern cities during period June 29-July 19 at Los Angeles and San Francisco International Airports. (Cal. Coop. Rpt.).

ORIENTAL BEETLE (Anomala orientalis) - FLORIDA - Collected in airplane at Tampa International Airport, Hillsborough County, July 20, by R. G. Racine and C. H. Lynch. (Fla. Coop. Sur.). CALIFORNIA - Intercepted in direct flight jet planes arriving in State from eastern cities during period June 29-July 19, at Los Angeles and San Francisco International Airports. (Cal. Coop. Rpt.).

POWDER POST BEETLES - NEW JERSEY - Adults in large numbers in Ocean City homes, Cape May County. (Ins.-Dis. Newsl., Aug. 9).

OLD-HOUSE BORER (Hylotrupes bajulus) - RHODE ISLAND - Numerous active infestations in Providence. (Mathewson, Aug. 10).

ARMY CUTWORM (Chorizagrotis auxiliaris) - COLORADO - Significant adult population in aestivation observed at Lulu Pass, Roosevelt National Forest. (Pruess).

GERMAN COCKROACH (Blattella germanica) - NEW JERSEY - Heavy in kitchens and bath-rooms of many restaurants, taverns and homes. (Ins.-Dis. Newsl., Aug. 9). NORTH CAROLINA - Severe in a house in Durham County. (Jones, Farrier).

CITADA KILLER (Sphecius speciosus) - RHODE ISLAND - City authorities concerned regarding heavy incidence of nests in a slope 300 feet long in North Smithfield, Providence County. (Mathewson, Aug. 10). MARYLAND - Abundant around lawns in several central counties. (U. Md., Ent. Dept.).

GIANT HORNET (Vespa crabro germana) - NORTH CAROLINA - Identified from Wilson County; this is one of the farthest eastern points the species has been collected in the State, and is a new county record. (Lewis, Farrier). Also received for determination from Wake and Watauga Counties. (Wray).

#### CORRECTIONS

CEIR 10(27):608 - In second paragraph, note on the mite, Dermatophagoides scheremetewskyi, should read as follows: Collected at Kaimuki, Oahu, September 15, 1959, in rug in a house.

CEIR 10(30):681 - SPIDER MITES - OREGON - Species damaging mint in Jefferson County has been determined as Tetranychus atlanticus.

CEIR 10(32):733 - CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Second statement concerning application of controls on alfalfa should be deleted from this section and added to PEA APHID (Macrosiphum pisi) on page 734.

CEIR 10(33):770 - MOSQUITOES - MINNESOTA - Culiseta tarsalis should read Culex tarsalis.

LIGHT TRAPS - All New Jersey collections for 1960 are from Burlington County. Traino and Sutton are 2 farms located in this county. Bridgeton location is an error; this should also be Burlington County.

#### ADDITIONAL NOTES

NEBRASKA - WESTERN CORN ROOTWORM (Diabrotica virgifera) adult populations very high in an area extending from York County to Dawson County southward to Kansas State line. Reports of severe damage by larvae in area continue to be received. Larvae still present in small numbers. SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi) adults increasing in southern counties. Second-brood emergence of EUROPEAN CORN BORER (Pyrausta nubilalis) well underway; eggs observed hatching. Activity indicated a severe second brood in many areas. SPOTTED ALFALFA APHID (Therioaphis maculata) population low, but increasing slowly in southwestern area. GRASSHOPPER infestations light and very spotty in west and south; predominant species Melanoplus bivittatus in the west and M. femur-rubrum in the east. SPIDER MITES heavy in corn in panhandle and MEXICAN BEAN BEETLE (Epilachna varivestis) moderate in most bean fields in Scottsbluff and Alliance area. (Andersen, Bell, Hill, Roselle).

MAINE - Moderate MEXICAN BEAN BEETLE infestation causing moderate to severe damage on beans in Androscoggin and Sagadahoc Counties. APHID infestations and damage to potatoes moderate to severe in Aroostook County. EUROPEAN RED MITE (Panonychus ulmi) winter eggs appearing in considerable quantities in several areas. No winter eggs in other localities exhibiting severe infestations. CODLING MOTH (Carpocapsa pomonella) showing sizeable second-brood flight in 1 Cumberland County orchard; well-above-normal captures indicate flight may continue into late August. APPLE MAGGOT (Rhagoletis pomonella) cage emergence

in Monmouth area down to less than 5 flies per day from 5 cages. Infestations somewhat heavier than usual in blueberries. APPLE APHID (Aphis pomi) much below 1959. Unspecified GRASSHOPPERS moderate to heavy in blueberry stands in Washington County; damage not determined. Severe TWO-SPOTTED SPIDER MITE (Tetranychus telarius) infestation in 1 orchard at Cumberland Center on ground cover. FALL WEBWORM (Hyphantria cunea) heavy in many localities, being particularly heavy in roadside growth, untreated apple trees, elms and other shade trees. Damage moderate to severe; actual statewide loss difficult to determine because of degree of injury in neglected areas. GRAPE LEAF FOLDER (Desmia funeralis) severe on woodbine in Cherryfield, Washington County. (Boulanger).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphygma frugiperda	Prod. ornith.	Trich. ni	Alabama argillacea	Heliothis zea vires.
<b>CALIFORNIA</b>						
Davis 8/3-9	28			11		10
<b>ILLINOIS</b>						
Urbana 8/5-11	133		60	86		
<b>INDIANA (Counties)</b>						
Lawrence 8/3-6,8	25		29			4
Tippecanoe 8/5-11	26		3			
Vanderburgh 8/4-5,10	103		55			17
<b>IOWA</b>						
Milford 7/28-8/2	146					
Soldier 7/29-8/1	42					1
<b>LOUISIANA</b>						
Baton Rouge 8/5-11	7	6,305	74		1	72
Franklin 8/11	4	448	33			21
Tallulah 8/6-12	12		10	21		24
<b>MAINE</b>						
Monmouth 8/6-12	3					
<b>MISSISSIPPI</b>						
*Stoneville 8/5-11	61	179	138	817	1	138 6
<b>MISSOURI</b>						
Sikeston 8/6-12	9				1	347
Columbia 8/6-12	22	35				
<b>NEBRASKA</b>						
Concord 7/15,16,20, 28,29	1,830					7
Kearney 8/1-5	67	51	2			
Lincoln 8/5-11	154					13
North Platte 8/3-9		1				42
Scotts Bluff 7/28- 8/3	28					
<b>NEW JERSEY (Counties)</b>						
Burlington 8/4	29					18
Burlington 8/8	18					13
Cape May 8/1						20
Cape May 8/4						10
Cape May 8/8						8
<b>TEXAS</b>						
Brownsville 8/9-11	2	539		610	1,826	119 2
Waco 8/6-12	14		106	1,265	21	1,163 6
<b>SOUTH CAROLINA</b>						
Clemson 8/6-12	51	22	90	12		140 2
Charleston 8/8-14	1	217	50	37		225 6
<b>WISCONSIN</b>						
*Janesville 8/2-8	165					
Platteville 8/6-9	5					
*Arlington 8/2-8	144					
Fairwater 8/2-8	37					
La Crosse 8/2-8	48					

\* Two traps - Stoneville, Janesville, Arlington.





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**ECONOMIC INSECT**

**REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
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United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPERS causing crop damage in Indiana and North Dakota. Heavy FALL ARMYWORM damage continues in several southern states and damage reported in areas of Maryland, Illinois and Missouri. (p. 799). CORN EARWORM infestations damaging in areas of South Carolina, Georgia and New Mexico. (p. 800). CORN LEAF APHID increasing in Arizona; high in Oklahoma and ranges 0 to over 500 in corn tassels in east central South Dakota. Adults of CORN ROOTWORMS becoming more abundant and damaging corn in Missouri, Ohio, Minnesota, Wisconsin and Nebraska; larval damage evident in several areas. (p. 801). TWO-SPOTTED SPIDER MITE damaging corn in Colorado, Utah and Washington; and another SPIDER MITE (*Oligonychus stickneyi*) damaged corn in New Mexico. THREE-CORNERED ALFALFA HOPPER continues damaging to alfalfa in areas of Arizona, Texas and New Mexico. (p. 802). FIELD CRICKETS heavy in eastern and northern North Dakota; controls to protect flax from injury underway. (p. 804).

Larvae of a noctuid, *Proxenus mindara*, caused considerable loss to strawberry fruit in areas of Santa Clara County, California. (p. 809).

BOLL WEEVIL populations increasing generally; third-generation weevils migrating in many areas. Infestations expected to increase in areas of Tennessee and Mississippi. (p. 809). BOLLWORMS generally present in cotton; infestations increased in some areas and controls needed on succulent cotton. CABBAGE LOOPER continues to damage cotton foliage from South Carolina to California, with infestations light to heavy. (p. 810). BEET ARMYWORM required control and COTTON LEAF PERFORATOR infestations becoming heavy in Arizona cotton. LYGUS BUGS and COTTON FLEAHOPPER also troublesome in Arizona. (p. 811).

BARK BEETLES causing considerable damage in California and Idaho; *Dendroctonus pseudotsugae* damage exceeds that of any year since 1956 in Idaho. (pp. 804, 812). SATIN MOTH adults taken in Hornbrook, Siskiyou County; a considerable distance from previously known infested locales. FALL WEBWORM becoming more prevalent in North Dakota and Minnesota; and damage reported in Vermont, North Carolina and Texas. ELM LEAF BEETLE heavy in areas of Oklahoma and California, and MIMOSA WEBWORM infestations heavy on mimosa in Delaware, Maryland and North Carolina. (pp. 812, 813).

FACE FLY remains number one pest of livestock in Illinois and populations continue high in Vermont. MOSQUITOES increased slightly in California and Utah; populations of *Anopheles quadrimaculatus* more numerous than at any time during last several years in Jefferson County, Texas; and *Aedes sollicitans* abundant and annoying in Maryland and Alabama, with *A. vexans* also very annoying in Maryland. HORN FLY heavy throughout Alabama and TABANIDS heavy in areas of Louisiana, Oklahoma and Utah. (p. 814).

CORRECTION. (p. 816).

ADDITIONAL NOTES. (p. 804).

INSECT DETECTION: New state records reported were *Dusmetia sangwani* in Hawaii (p. 818) and face fly in Minnesota (p. 814). New county records reported were white-fringed beetles in Cullman County, Alabama (p. 801); soybean cyst nematode in Poinsett County, Arkansas (p. 804); and *Conotelus mexicanus* in Hawaii County, Hawaii (p. 818).

HAWAIIAN insect notes. (p. 818).

Status of some IMPORTANT INSECTS in the United States. (p. 819).

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Reports in this issue are for week ending August 19, unless otherwise indicated.

WEATHER OF THE WEEK ENDING AUGUST 22

A below-normal average temperature regime prevailed in the western section of the country, except in California and extreme southern areas where weekly averages were 3° to 6° above normal. The northern Great Plains, upper Great Lakes, and northern New England regions recorded above normal average temperatures. During the middle of the week, a cold front, stretching from the Dakotas through Kansas, brought below-normal temperatures to the central Great Plains and upper Mississippi Valley. Increased rainfall activity in some sections of the South Atlantic States resulted in below-normal temperatures along the Carolina coast. Near-normal temperatures, however, were experienced in most of the eastern section of the country and in the Gulf coastal region. Near-record low temperatures and light frost occurred in some higher areas of the central Rocky Mountains. In the Far Southwest and Pacific States, temperatures rose above 100° as far north as the Willamette Valley in Oregon.

Except for a few scattered thundershowers, most of the western half of the country remained dry. Numerous showers brought moderate to generous rainfall to the central Great Plains, Mississippi and upper Ohio Valleys, some sections of the South Atlantic States, and to the Gulf coastal region. In New England, the Middle Atlantic States, and Great Lakes region, rainfall was generally light to moderate. Heavy rainfall was reported in some sections of Arkansas, Louisiana, Kansas, Texas, Tennessee, and Mississippi. Helena, Arkansas, reported a 4.15-inch total weekly rainfall, and Vicksburg, Mississippi, received 8.08 inches. This was the wettest week in Arkansas since the latter part of June. Locally heavy rainfall occurred in a number of other places, including over 3 inches at Paw Paw, Illinois, in an hour, nearly 7 inches at Oaks, North Dakota, in 36 hours, and 7.01 inches at Memphis, Tennessee, for the week. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - INDIANA - Melanoplus femur-rubrum and M. differentialis moving from roadside and field margin areas into crop fields; causing considerable damage. Economic populations found in localized areas throughout central and northern areas. In a few localized areas counts ranged to highs of 40 per square yard in alfalfa and clover. Controls being applied locally to protect tomatoes, soybeans and corn. Adults of both species observed in Tippecanoe County on August 19. (Matthew). M. differentialis doing considerable feeding in corn in Miami County. (Everly). ILLINOIS - Grasshoppers damaging soybeans in east central section. In some corn, marginal rows being attacked. (Ill. Ins. Rpt.). OKLAHOMA - Adult grasshopper survey recently completed in 17 panhandle, northwestern and western counties showed rangeland populations generally light. Heaviest infestations continue to be in soil bank acreages, roadsides and cropland margins. Dominant species M. differentialis, M. bivittatus, M. bilituratus, M. packardii and Mermiria maculipennis. In alfalfa in Payne County, counts ranged 0.3-3.6 nymphs per sweep of Conocephalus fasciatus. (Okla. Coop. Sur.). NEBRASKA - Adults of M. bivittatus numerous in northeastern portions of Dixon, Dakota and Cedar Counties; one cornfield with damage in margin noted. (Bergman). Formal adult surveys near completion; adults widely scattered. Most infestations noneconomic to light. (Hill, Bell). SOUTH DAKOTA - Adult survey nearing completion in State; very spotted infestation indicated. (Mast). NORTH DAKOTA - Threatening to severe infestations in northwest counties continue to damage late crops of flax, corn and alfalfa. Scattered infestations in other areas also causing alarm. Control measures to protect late crops underway in many sections. (N. D. Ins. Sur.). UTAH - Damaging numbers north of Summit, west of Kanarrville, with scattered infestations on Cedar Mountain in Iron County. (Sjblom, Knowlton). Still numerous on Wilson Mesa of Grand County; Deer Flat, west of Blanding in San Juan County; and in Mt. Sterling, Hyrum and Paradise areas of Cache County. More dispersed now in Box Elder County areas. Many dying off. (Thornley, Knowlton).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Ranged 10-45 per 5 sweeps in alfalfa in Brazos River area of Burleson County; also, as a budworm, damaged 15-40 percent of late grain sorghum in area. (Doering). OKLAHOMA - Infestation 60 percent in young sorghum in local areas of Payne County. (Okla. Coop. Sur.). LOUISIANA - Very heavy infestations continue throughout southern area; larvae ranged 10-130 per sweep on pasture grass in Washington Parish; ranged 10-40 per sweep on volunteer wheat and oats and on late grain sorghum in Tensas Parish; very heavy in St. Landry Parish; and spotty on alfalfa and pasture grass in Caddo Parish. Light to medium infestations reported in lawns in St. John the Baptist Parish. (Spink). ALABAMA - Still causing considerable damage in State. Damage to peanuts reported in Dale County and damage to sorghum and other crops reported in Mobile County. (Arant, Barns, Seibels). GEORGIA - Light to moderate on peanuts and infestations general and heavy in whorls and on heads of grain sorghum in southern area. (Johnson). NORTH CAROLINA - Heavy infestation in millet in Pender County. (Honeycut, Farrier). Injuring corn in Caldwell County. (Andrews, Farrier). MARYLAND - Light to moderate in late corn in Frederick and Talbot Counties. (U. Md., Ent. Dept.). ILLINOIS - Widely scattered over entire State in late maturing corn, with economic infestations occurring in some fields. (Ill. Ins. Rpt.). MISSOURI - Late-planted corn in southwest ranged 6-12 percent infested. In northwest, 2-4 percent of plants in late-planted fields infested. (Munson, Thomas, Wood).

ARMYWORM (Pseudaletia unipuncta) - OHIO - Larvae in grass cover in peach orchard in Jackson County. (Blair). MINNESOTA - Light infestations in corn in southeast; infestations seem to be restricted to weedy corn fields. Reported in Winona clipping oat heads; yield reduction 75 percent in 2 fields. (Minn. Ins. Rpt.). MARYLAND - Moderately injuring sweet corn locally in Wicomico County. (U. Md., Ent. Dept.).

CORN EARWORM (*Heliothis zea*) - SOUTH CAROLINA - Causing damage to late-planted corn in Berkeley County. (Nettles et al.). GEORGIA - Light to heavy infestations on soybeans and light to moderate on peanuts and grain sorghum in southern area. (Johnson). LOUISIANA - Spotty infestations found in alfalfa in Caddo Parish. (Spink). MISSOURI - Counts in grain sorghum in southwest ranged 0-10 larvae per 100 heads. (Munson, Thomas, Wood). ILLINOIS - Egg laying occurring from central area south, but no eggs found in northern area. (Ill. Ins. Rpt.). NEBRASKA - Field corn in southeast 60-80 percent infested with larvae; field corn in Lincoln County 4-5 percent infested. (Bergman). OKLAHOMA - Counts in peanuts in 3 Caddo County fields revealed 9 larvae per 100 terminals and in several Payne County fields 6 larvae per 100 terminals noted. In cowpeas, light damage noted in Haskell County. Some sorghum fields examined in Stillwater area showed 0.1-0.8 larvae per head. (Okla. Coop. Sur.). COLORADO - Larvae 4-6 per 10 ears of corn in Montrose and Delta Counties. (Colo. Ins. Sur.). UTAH - Early sweet corn 50-80 percent infested in Iron County; infestation considered below average. (Sjoblom, Knowlton). Earworm counts of 20 and 75 percent tip infestation recorded in 2 home patches at Logan; these counts unusual for northern area this season. Most counts in canning districts have been much lower. (Thornley, Davis). NEW MEXICO - Causing severe damage to ears of corn in Luna and Dona Ana Counties. (N. M. Coop. Rpt.).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - NEBRASKA - Second-brood egg masses average 8-40 per 100 plants in Lancaster County; adults numerous in field margins. Egg deposition will likely continue for several weeks. (Bergman). MINNESOTA - Development delayed by cool weather; only few moths emerged. Occasional egg mass observed. It appears that only late-harvested sweet corn may require treatments. (Minn. Ins. Rpt.). WISCONSIN - Egg masses averaged 1 per 50 plants in corn in Iowa, Lafayette and Grant Counties. A field of very early field corn near Prairie du Chien had 4 first-instar larvae per 50 plants feeding in the ear. (Wis. Coop. Sur.). ILLINOIS - Egg mass counts averaged 23 per 100 corn plants in northeastern and northwestern sections. About 40 percent of eggs hatched. Pupation of first-generation borers still averages less than 50 percent in northern section. (Ill. Ins. Rpt.). MISSOURI - Heavy moth flights observed in southeast. Egg mass counts ran as high as 40 per 100 plants. (Keaster). Few moths still present in northwest. (Munson, Thomas, Wood). MICHIGAN - Male moths emerging at Sodus from larvae collected from sweet corn. Fifth-instar larvae and pupae at Detroit. Larval populations decreasing in all areas. (Hutson, August 16). DELAWARE - Adults increased rapidly in Sussex County, with few fresh egg masses and first-instar larvae found on corn throughout State. MARYLAND - Infestations generally light to moderate, but increasing, in field corn in all sections. (U. Md., Ent. Dept.). ALABAMA - Second generation active in Tennessee Valley. Very few borers present in Sand Mountain area. (Arant).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Continues to damage grain sorghum in Mobile County; one 20-acre field completely destroyed. (Seibels). LOUISIANA - Causing considerable damage to late sorghum in Tensas and East Baton Rouge Parishes. (Spink).

SOUTHWESTERN CORN BORER (*Zea diatraea grandiosella*) - OKLAHOMA - Second-generation borers averaged 2.1 per plant in May-planted dent corn in Stillwater area. (Okla. Coop. Sur.).

CORN ROOT WEBWORM (*Crambus caliginosellus*) - NORTH CAROLINA - Larvae causing injury in field of milo in New Hanover County. (Aycock, Farrier).

SORGHUM WEBWORM (*Celama sorghiella*) - TEXAS - New generation beginning to build up in late-planted grain sorghum in Burleson County. (Doering). MISSOURI - In southwest, 6 percent of sorghum heads infested with 1-4 mature larvae or pupae. (Munson, Thomas, Wood).

SORGHUM MIDGE (*Contarinia sorghicola*) - OKLAHOMA - Only occasional midge reported from fields examined in Payne County. (Okla. Coop. Sur.).



CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Infestations increasing on sorghum statewide. (Ariz. Coop. Sur.). OKLAHOMA - High populations in sorghum in Major County; counts up to 100 per whorl in sorghum in Payne County. (Okla. Coop. Sur.). SOUTH DAKOTA - Counts range 0-500 plus in corn tassels in east central area. (Mast). MINNESOTA - Infestations greatly reduced; predators active. (Minn. Ins. Rpt.). WISCONSIN - Populations remain unchanged; predators very active. (Wis. Coop. Sur.). ILLINOIS - Infestations averaged 5 percent of plants in late-maturing fields heavily infested. Every plant examined had some aphids on it. (Ill. Ins. Rpt.). OHIO - Low to medium populations observed on 90-100 percent of cornstalks in 3 fields of late-planted corn in Clark County; percent infested stalks less in several other fields checked. (Blair). Populations decreasing in previously reported infested fields in Pike County. (McFerren). One field 96 percent infested, with low population per stalk, in Ottawa County. (Grimm, Aug. 11).

STINK BUGS (Chlorochroa spp.) - NEW MEXICO - Populations, 95 percent C. sayi and 5 percent C. ligata, damaging small grains in Hidalgo and Luna Counties. Several fields averaged 1-2 per head of grain. (N. M. Coop. Rpt.).

RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Adults averaged 18 and nymphs 3 per 100 sheeps in 12 rice fields in St. Landry Parish. (Spink).

CHINCH BUG (Blissus leucopterus) - OHIO - Continues to damage field corn in Hardin County. (Blair, Aug. 13). ALABAMA - Causing heavy damage over Mobile County. (Seibels). LOUISIANA - Reported in pastures and rice in St. Landry Parish. (Spink). OKLAHOMA - Counts ranged 10-15 per linear foot in sorghum in Pawnee County. (Okla. Coop. Sur.).

A CHINCH BUG (Blissus leucopterus insularis) - LOUISIANA - Still reported from many areas of State in St. Augustine grass lawns. (Spink).

CORN ROOTWORMS (Diabrotica spp.) - MISSOURI - Adult counts on corn in northwest range 0-8 per ear. In central area, counts ranged from 4 to as high as 18 per ear on corn that still had fresh silks. One field in central area severely damaged. (Munson, Thomas, Wood). OHIO - Large numbers of D. longicornis found feeding in 33-acre field of corn in Hardin County. Corn badly lodged due to winds. (Blair, Aug. 13). MINNESOTA - Adults emerging and are quite common in southern counties, feeding on pollen collected in leaf axiles of corn. Rootworm damage to corn is quite evident, especially in southern area. D. longicornis dominant species, with very few D. undecimpunctata howardi present. (Minn. Ins. Rpt.). WISCONSIN - Adults of D. longicornis causing noticeable injury to silks of corn in some fields in southwest. Some feeding observed on kernels of exposed corn. Adults also becoming more numerous in other sections. (Wis. Coop. Sur.). NEBRASKA - Adults quite numerous in southeast, south central and northeast; populations primarily D. virgifera in areas surveyed. D. longicornis adults low in central and southern regions. D. undecimpunctata howardi adults more prevalent in southern counties, but present in small numbers throughout eastern area. Rootworm damage continues in eastern area. (Bergman).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Found for first time in Cullman County during July. (PPC, So. Reg.).

NITIDULIDS - MINNESOTA - High numbers of adults noted in corn in southern half of State. Some feeding damage observed on tips of ears. (Minn. Ins. Rpt.). UTAH - Infesting 50 percent of ears of corn in most Washington County fields. Older ears about all infested. (Knowlton, Hughes).

FLEA BEETLES - OKLAHOMA - Undetermined species heavy on sorghum in Bryan County and light in Payne County. (Okla. Coop. Sur.).

THRIPS - MARYLAND - Moderately injuring corn in Frederick County and late soybeans in Worcester County. (U. Md., Ent. Dept.). UTAH - Numerous in alfalfa at Willard, Box Elder County. (Knowlton).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Infesting most fields of corn; damage on lower and middle leaves, with entire plant being infested in some fields in Prowers, Bent, Otero, Crowley, Pueblo, Larimer, Weld, Adams and Boulder Counties. (Colo. Ins. Sur.). UTAH - Damaging many fields of field corn and some of sweet corn throughout Weber County and in northern Davis County. (Knowlton). WASHINGTON - Heavy damage to corn. (Landis).

A SPIDER MITE (Oligonychus stickneyi) - NEW MEXICO - Heavy infestations damaging corn and grain sorghum in Hidalgo, Luna and Dona Ana Counties. (N. M. Coop. Rpt.).

AN ERIOPHYID MITE - OKLAHOMA - Infestations of an unidentified species extremely widespread in some areas in Woodward County, with severe damage to developing buds; counts ranging up to 1,500 nymphs per head not uncommon. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - UTAH - Populations low in Washington County alfalfa. (Knowlton). COLORADO - Populations remain low in alfalfa; 100 per 100 sweeps in Prowers County; 0-20 per 100 sweeps in Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEW MEXICO - Generally light in alfalfa in southern counties; occasional heavy infestations requiring treatment in Chaves and Eddy Counties. (N. M. Coop. Rpt.). OKLAHOMA - Populations declined somewhat during past week due to thundershower activity. Counts in several fields in Payne County ranged 2-15 per sweep. (Okla. Coop. Sur.). WISCONSIN - Surveys negative to date. (Wis. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - WYOMING - Averaged 25 per sweep in alfalfa in Big Horn Basin and 15 per sweep in Sheridan and Johnson Counties. (Fullerton). COLORADO - Counts in alfalfa 100-300 per 100 sweeps in Montrose County; 100 per 100 sweeps in Prowers, Bent, Otero, Crowley and Pueblo Counties; 1,000-2,000 per 100 sweeps in Saguache, Rio Grande, Conejos, Alamosa and Costilla Counties. (Colo. Ins. Sur.). NEW MEXICO - Generally light in Dona Ana County alfalfa. (N. M. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - UTAH - Have been extremely numerous in Kane County alfalfa. (Knowlton). WYOMING - Adults averaged 9 per 25 sweeps in alfalfa in Sheridan and Johnson Counties and 7 per 25 sweeps in Big Horn Basin. (Fullerton). COLORADO - Counts in alfalfa for seed production 200-300 per 100 sweeps in untreated fields and 20-50 per 100 sweeps in treated fields in Mesa County. Alfalfa in Delta County has 150-200 Lygus spp. per 100 sweeps. Counts 50-200 per 100 sweeps in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEW MEXICO - Averaged 7-10 per sweep in northern Dona Ana County alfalfa. (N. M. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations continue very high in alfalfa statewide; counts average 40-60 per 10 sweeps. Some of more heavily infested fields have as many as 20 per sweep, with girdling damage very evident. (Ariz. Coop. Sur.). NEW MEXICO - Averaged 4-6 per sweep in Dona Ana County alfalfa. (N. M. Coop. Rpt.). TEXAS - Ranged 20-35 per 5 sweeps in alfalfa in Burleson County. (Doering, Randolph). OKLAHOMA - Some populations in north central area rose slightly during week; counts ranged 0.1-2.5 per sweep. (Okla. Coop. Sur.). LOUISIANA - Ranged 25-48 and averaged 33 per 100 sweeps in soybeans in St. Landry Parish. (Spink).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Counts in alfalfa in southwest ranged 4-12 per sweep; mostly nymphs. Counts in southeast ranged 8-45 per sweep and from 15 to over 100 per sweep in central area. Some yellowing of alfalfa evident in central area. (Munson, Thomas, Wood). WISCONSIN - No appreciable increase in alfalfa in southwest or other areas of State. Still increasing some in Dane County, however; counts 1-2 per sweep. Populations generally spotty throughout State, with heavier populations being generally in heavier soil areas. (Wis. Coop. Sur.). DELAWARE - Slight increase noted on soybeans, highest counts 2-3 per sweep in Sussex County. Present on alfalfa statewide. (Burbutis, Mason). MARYLAND - Causing considerable yellowing in several alfalfa fields in Frederick County. Light on soybeans in Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

BEEF ARMYWORM (Spodoptera exigua) - TEXAS - Populations ranged 30-50 per 5 sweeps in alfalfa in Burleson County. (Doering). Serious damage to castor beans observed. (Randolph).

VARIEGATED CUTWORM (Peridroma saucia) - COLORADO - Moderate numbers found in alfalfa in Saguache and Rio Grande Counties. (Colo. Ins. Sur.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - ARIZONA - Infestations continue to increase slowly in alfalfa statewide; counts average 2-4 larvae per 10 sweeps. (Ariz. Coop. Sur.). TEXAS - Light infestation on alfalfa in Burleson County. (Doering). SOUTH DAKOTA - Adults remain plentiful in alfalfa in east central area. (Mast). MISSOURI - Counts 0.25-0.5 per sweep in alfalfa in southwest. (Munson, Thomas, Wood). DELAWARE - Larvae present on alfalfa statewide, but not in serious numbers. Highest counts in Sussex County averaged 2 per 10 sweeps. (Burbutis, Mason). MARYLAND - Larval populations light to moderate on alfalfa in Frederick County. (U. Md., Ent. Dept.).

ALFALFA WEBWORM (Loxostege commixtalis) - DELAWARE - Very heavy infestation noted in large field of alfalfa in Sussex County, with extensive feeding injury and webbing throughout field. Larvae present in several fields throughout State but not in injurious numbers. (Burbutis, Mason).

BEEF WEBWORM (Loxostege sticticalis) - COLORADO - Larvae damaging seedling alfalfa; 1-2 larvae per plant in Saguache and Rio Grande Counties. (Colo. Ins. Sur.).

GARDEN WEBWORM (Loxostege similalis) - TEXAS - Ranged 5-10 per 5 sweeps in alfalfa in Burleson County. (Doering). MISSOURI - Counts in alfalfa in southwest ranged 1-2 larvae per sweep. (Munson, Thomas, Wood).

SNOWY TREE CRICKET (Oecanthus niveus) - OKLAHOMA - Counts in alfalfa in north central area around Stillwater ranged 0.1-0.5 per sweep. (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - All instars present in soybeans and alfalfa throughout State; feeding injury on soybeans becoming more noticeable, with counts ranging 1.5-4 per sweep. (Burbutis, Mason). MARYLAND - Light on soybeans in Worcester County. (U. Md., Ent. Dept.).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - In several fields of peanuts in Caddo County, infestations ranged 0-51 per 100 terminals; and in Payne County counts averaged 28 per 100 terminals. (Okla. Coop. Sur.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Light to heavy infestations on soybeans in southern area. (Johnson).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Light to heavy infestations on soybeans in southern area. (Johnson).

A STRIPED BLISTER BEETLE (Epicauta sp.) - LOUISIANA - Spotty infestations in late soybeans in Tensas Parish and on alfalfa in Caddo Parish. Moderate to heavy infestations in gardens and pastures in Red River Parish. (Spink).

BEAN LEAF BEETLE (Cerotoma trifurcata) - LOUISIANA - Ranged 6-82 and averaged 39 per 100 sweeps in soybeans in St. Landry Parish. (Spink). MARYLAND - Moderate injury to soybeans noted in Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Light to moderate infestations on soybeans in southern area. (Johnson).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Ranged 11-97 and averaged 41 per 100 sweeps in soybeans in St. Landry Parish. (Spink).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults and nymphs noticeably increased on soybeans throughout State; counts averaged 2-3 per sweep. (Burbutis, Mason).

SOYBEAN CYST NEMATODE (Heterodera glycines) - ARKANSAS - Found for first time in Poinsett County during July. (PPC, So. Reg.).

SIX-SPOTTED LEAFHOPPER (Macrostelus fascifrons) - NORTH DAKOTA - Populations in flax now average 2-3 per sweep. No economic incidence of aster yellow disease reported this season. (N. D. Ins. Sur.).

FIELD CRICKETS - NORTH DAKOTA - Highest populations in several years present in eastern and northern counties. Numerous scattered infestations also reported from other sections. Control measures to protect flax from cricket injury underway in some areas. (N. D. Ins. Sur.). RHODE ISLAND - Nearly mature nymphs of Acheta sp. relatively light in Narragansett. (Hansen).

#### ADDITIONAL NOTES

IDAHO - PEA APHID (Macrosiphum pisi) numbers greatly reduced in alfalfa; predators many times more abundant than aphids. Populations in Cassia County fields generally below 1959 populations and predators holding infestations in check. Populations in Twin Falls County alfalfa higher where fields treated with a phosphate insecticide. Predators in such fields much lower than in untreated fields. SPIDER MITES (Tetranychus spp.) present in most clover and alfalfa seed fields; being reduced by phytoseiid mites. Few infestations in Jefferson County potatoes. However, incidence about 20 percent that of 1959. CORN LEAF APHID (Rhopalosiphum maidis) quite variable in late-planted spring grain in Jefferson County; numerous predators reducing infestations in some fields. Extremely high populations of an unspecified THRIPS in 200 acres of potatoes in south central area; severe damage occurring. Several fields in Power County also severely damaged, particularly around margins. However, in fields planted in long, narrow strips, damage evident throughout. (Waters, Portman, Schow, Cross). DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) - Large groups of faded trees in Valley County in upper South Fork of Salmon River drainage. Damage centered near Goat Creek and along Four Mile Creek. Lesser infestations in Secesh River drainage near Split Rock Lookout. Damage exceeds that of any year since 1956. A record hot, dry season caused trees attacked last spring to fade noticeably by August 1. Ordinarily, trees do not fade before September 1; fading may be delayed over winter. Rapid fading provided unusual opportunity to assess current trend of damage. Observations indicate continuation of damage during 1960, presumably due in part to drying of phloem. Dryness and brood mortality most pronounced in smaller trees. Second-generation adults of a BRACONID (Coeloides brunneri) emerging from trees infested with D. pseudotsugae in Valley County. Large numbers of FLATHEADED WOOD BORERS (Melanophila drummondii and Buprestis rusticorum) attracted to felled Douglas-fir in same county. Also in Valley County, adults of a HORNTAIL (Urocerus californicus) flying near Douglas-firs infested with D. pseudotsugae; adults of a SCOLYTID (Scolytus sp., probably unispinosus) in flight and landing on stems of felled Douglas-fir. (Furniss).

MAINE - Moderate SALT-MARSH CATERPILLAR (Estigmene acrea) infestations causing moderate damage to vegetables in Monmouth area. EUROPEAN CORN BORER (Pyrausta nubilalis) moderate on untreated corn in same area; damage moderate. IMPORTED CABBAGEWORM (Pieris rapae) causing moderate damage to cabbage and other crucifers in Greene area. ELM LEAF BEETLE (Galerucella xanthomelaena) entering homes in Bangor area and moderate to severe damage to elms reported locally. (Boulanger).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - NEW JERSEY - Fresh stings found in apples in untreated orchards, indicating pest is still a potential problem. (Ins.-Dis. Newsl., Aug. 16). INDIANA - Adults emerging from cage in insectary August 15, containing apples originally infested with newly hatched larvae on July 18; period coincided with increased second-brood hatch in orchard in Vincennes area. Early third-brood larvae now hatching in the orchard; numbers likely to increase after August 22. (Hamilton, Aug. 15). Attack still at low level in Orleans area. (Marshall, Aug. 16). COLORADO - One to 3 percent of Bartlett pears "wormy" at harvest in Mesa County. (Colo. Ins. Sur.).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - MICHIGAN - Second-brood larvae pupating at Grand Rapids, Sparta, South Haven, St. Joseph and Millburg. (Hutson, Aug. 16).

APPLE MAGGOT (*Rhagoletis pomonella*) - MINNESOTA - Adults remain active. (Minn. Ins. Rpt.). WISCONSIN - Continues to be caught in untreated apples, hickory and elm trees in Milwaukee and Dane Counties. Numbers caught daily ranged 1-12 in each tree during past 10 days, when counts were made. (Wis. Coop. Sur.).

APPLE APHID (*Aphis pomi*) - NEW JERSEY - Fair numbers present, primarily on new sucker growth not protected by previous controls. Can build up quite rapidly in present weather. (Ins.-Dis. Newsl., Aug. 16). MICHIGAN - Present in scattered orchards throughout State; little trouble with control. (Hutson, Aug. 16).

ORCHARD MITES - NEW JERSEY - Unspecified species continue a problem in some apple blocks, but appear under control in most cases. (Ins.-Dis. Newsl., Aug. 16). INDIANA - *Panonychus ulmi* and *Tetranychus telarius* activity still high in many orchards in Vincennes area; controls still needed. Mite populations heavy on Jonathans where midseason controls were omitted. (Hamilton, Aug. 15). Mites show no tendency to increase in Orleans area. (Marshall, Aug. 16). COLORADO - *T. telarius* being controlled in most Delta County apple orchards. (Colo. Ins. Sur.). UTAH - *T. telarius* congregating at bases of trees in some Weber County orchards. (Burningham).

PEACH TREE BORER (*Sanninoidea exitiosa*) - COLORADO - Appearing in some Delta County peach orchards; controls applied. (Colo. Ins. Sur.).

A SAP BEETLE (*Carpophilus* sp.) - CALIFORNIA - Heavy in peaches in Madera, Madera County. (Cal. Coop. Rpt.).

A PYRRHOCORID (*Largus cinctus californicus*) - CALIFORNIA - Heavy populations occurred on plum trees in Palermo, Butte County. (Cal. Coop. Rpt.).

PEAR-SLUG (*Caliroa cerasi*) - WYOMING - Heavily infesting cherry trees in Sheridan area, Sheridan County. (Fullerton).

PEACH SILVER MITE (*Aculus cornutus*) - COLORADO - Appearing in peach orchards in Mesa County, with little silvering taking place at present. (Colo. Ins. Sur.).

A PECAN CATOCALA (*Catocala* sp.) - NEW MEXICO - Defoliating pecan trees in nursery near Las Cruces, Dona Ana County. (N. M. Coop. Rpt.).

A FALSE SPIDER MITE (*Brevipalpus* sp.) - NEW MEXICO - Damaging foliage of pecan nursery stock in Dona Ana County. (N. M. Coop. Rpt.).

GRAPE BERRY MOTH (*Paralobesia viteana*) - MICHIGAN - Egg laying reached peak August 8-13 in Kalamazoo-New Buffalo-Cassopolis triangle, the principal grape-growing area in State. (Hutson, Aug. 16).

GRAPE LEAF FOLDER (*Desmia funeralis*) - SOUTH CAROLINA - Damaging grapes in Calhoun, Orangeburg and Lexington Counties. (Nettles et al.).

A GRAPE LEAFHOPPER (*Erythroneura* sp.) - NEW MEXICO - Heavy infestations damaging grape foliage throughout most of State. (N. M. Coop. Rpt.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Inspections in State of Sinaloa showed infestations to vary from light to heavy. Inspections at Hermosillo negative. At Allende, Nuevo Leon, 3 additional infested trees reported in a grove found infested in June. (PPC, Mex. Reg., July Rpt.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - During July, 9 adults trapped in Baja California; 7 in Tijuana and 2 in Ensenada. Spraying operations began in Ensenada on July 17 after trapping of adult there on July 13. Survey for larval infestations in fallen fruits at Tijuana and Ensenada was negative. (PPC, Mex. Reg.).

Citrus Insect Situation in Florida - Mid-August - PURPLE SCALE (*Lepidosaphes beckii*) activity declined and is in very low range. Populations and activity will remain at present level in all districts during next 2 months. FLORIDA RED SCALE (*Chrysomphalus aonidum*) activity still high, but downward trend which has begun will continue until mid-September. Populations during August have been higher than in previous years and will remain above average during next month. Highest activity is in Bartow, Ridge, Indian River, Orlando and upper east coast districts. Decreasing trend of CITRUS RED MITE (*Panonychus citri*) of past month will persist into September. Although populations generally will be in low range during next 6 weeks, a few groves may continue to harbor heavy infestations. CITRUS RUST MITE (*Phyllocoptura oleivora*) activity has declined since July and is expected to drop further during next month. Fewer groves will develop damaging infestations. Summer population peak for State occurred in early August at a level below average for previous years. Highest activity is in Ridge, Bartow, upper east coast, Brooksville and Orlando districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

#### TRUCK CROP INSECTS

GREEN PEACH APHID (*Myzus persicae*) - WASHINGTON - Unusually scarce on potatoes following 15 days of hot weather. (Landis). COLORADO - Populations increasing in untreated field of potatoes in Weld County, with 208 per 10 leaves; averaged 37.9 per 10 leaves in treated field in same county. (Colo. Ins. Sur.). MARYLAND - Populations generally light on peppers in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). NEW JERSEY - Building up on peppers. (Ins.-Dis. News1., Aug. 16).

POTATO APHID (*Macrosiphum euphorbiae*) - COLORADO - Ranged 20-50 per 100 sweeps of potatoes in Saguache, Rio Grande, Alamosa, Conejos and Costilla Counties. (Colo. Ins. Sur.).

Potato Aphids in Maine - At Presque Isle, decreased slightly on untreated potatoes but continued to increase at substantial rate in commercial plantings treated with nonresidual insecticides. Populations now small in untreated potatoes of intermediate planting date, but vary from very small to moderate in commercial, treated fields, depending somewhat on length of time since treatment. BUCKTHORN APHID (*Aphis nasturii*) now predominates on untreated potatoes, followed by POTATO APHID (*Macrosiphum euphorbiae*) and GREEN PEACH APHID (*Myzus persicae*); in treated fields observed, *M. euphorbiae* and *M. persicae* predominate. Numbers of least-abundant FOXGLOVE APHID (*Myzus solani*) increased slightly in treated and untreated plantings. Abundance of dead aphids affected by fungus disease and parasites continued to increase. (Shands).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - WASHINGTON - Eggs hatched about August 8 on potatoes where overhead sprinklers were used; defoliating plants. No appreciable hatch in potato fields where rill irrigation was used. Heavy damage occurred in 1 field. (Landis). WYOMING - Adults averaged 4 per

25 sweeps in each field of potatoes sampled in Park and Washakie Counties. (Fullerton). NORTH DAKOTA - Adults caused moderate defoliation in 1 field of potatoes near Cando, Towner County; averaged 3 adults per sweep. Populations generally light or nonexistent elsewhere. (N. D. Ins. Sur.).

FLEA BEETLES - Epitrix tuberis ranged 4-20 per 100 sweeps of potatoes in Mesa County. (Colo. Ins. Sur.). NORTH DAKOTA - Populations of unspecified species in Red River Valley remain high in untreated potatoes; 10-15 per sweep. Leaf injury severe at some locations. (N. D. Ins. Sur.). MINNESOTA - High numbers of Epitrix cucumeris reported in apparently untreated potato fields in north-west district. (Minn. Ins. Rpt.). WISCONSIN - Second-generation E. cucumeris has been very numerous in some untreated potato fields. Controls satisfactory when systemic insecticide was used earlier. Second-generation populations appear higher than usual. (Wis. Coop. Sur.).

POTATO TUBERWORM (Gnorimoschema operculella) - MARYLAND - Small larvae noted infesting eyes of recently dug potato tubers at a Wicomico County locality. (U. Md., Ent. Dept.).

LEAFHOPPERS - UTAH - Empoasca filamenta numerous on potatoes at Logan, Cache County. (Thornley, Knowlton). COLORADO - High numbers of Macrosteles fascifrons collected in light traps in Mesa and Otero Counties. Incidence of aster yellows 1-2 percent in field of potatoes in Larimer County. (Colo. Ins. Sur.). NORTH DAKOTA - Empoasca fabae ranged 3-20 per 10 sweeps in potatoes through Red River Valley and in Cando area of Towner County. "Hopperburn" not observed at any location. M. fascifrons ranged 2-5 per 10 sweeps in potatoes. (N. D. Ins. Sur.). SOUTH DAKOTA - E. fabae counts high in east central section; no damage observed. (Mast). MICHIGAN - Populations of Empoasca sp. building up at Stanton, Saginaw and Lansing. (Hutson, Aug. 16). DELAWARE - Adults and nymphs of E. fabae common on beans in most areas of State. (Burbutis, Mason).

LYGUS BUGS (Lygus spp.) - UTAH - Adults and nymphs numerous on potatoes at Ogden, Weber County. (Knowlton).

SPIDER MITES (Tetranychus spp.) - WASHINGTON - T. telarius caused damage to potatoes, dry beans and sugar beets. (Landis). OKLAHOMA - High populations of Tetranychus sp. on tomato plants in Stillwater area, Payne County, and in Pontotoc County. (Okla. Coop. Sur.).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Egg counts on tomatoes remain low in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). DELAWARE - Adults common in fields of lima beans in Sussex County; some larval-feeding injury to pods noticeable. Larval populations in most fields still very light. (Burbutis, Mason). MARYLAND - Eggs common on pepper foliage at several locations in Worcester County. (U. Md., Ent. Dept.).

HORNWORMS (Protoparce spp.) - RHODE ISLAND - Mature larvae feeding on tomato at Kingston, Washington County. (Kerr). MARYLAND - Eggs common on pepper foliage at several locations in Worcester County. (U. Md., Ent. Dept.). INDIANA - Becoming scarce in tomato fields; P. sexta still predominant species. (Gould). UTAH - Damaging home garden tomato foliage in several localities in Cache County. (Knowlton).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MARYLAND - Larvae increasing in peppers; 5 fields found lightly infested to date. (U. Md., Ent. Dept.).

A SAP BEETLE (Carpophilus sp.) - CALIFORNIA - Heavy in tomato fruit in Riverbank, Stanislaus County. (Cal. Coop. Rpt.).

A VINEGAR FLY (Drosophila hydei) - CALIFORNIA - Infesting tomato fruit in Fillmore, Ventura County; cantaloup dumps in Chico, Butte County; and orange culls in Manteca, San Joaquin County. (Cal. Coop. Rpt.).

CYCLAMEN MITE (Steneotarsonemus pallidus) - MICHIGAN - Limited infestation on peppers at Monroe, Monroe County; apparently came from greenhouse where peppers were grown. (Hutson, Aug. 16).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Larvae on carrots in New Castle County, squash in Kent County and peppers in Sussex County, causing light to moderate injury. Abundant in 1 field of tomatoes in New Castle County, with heavy feeding injury; eggs common in most fields of cabbage throughout State. (Burbutis, Mason). NEW JERSEY - This and Pieris rapae building up on cabbage. (Ins.-Dis. Newsl., Aug. 16). INDIANA - T. ni and P. rapae abundant and quite destructive to late cabbage in Tippecanoe County. (Gould). COLORADO - Larvae averaged 5-15 per 100 sweeps in potatoes in Rio Grande and Saguache Counties. (Colo. Ins. Sur.).

HARLEQUIN BUG (Murgantia histrionica) - OKLAHOMA - Moderate to high populations on home garden cabbage in Stillwater area, Payne County. (Okla. Coop. Sur.).

GARDEN SYMPHYLID (Scutigerella immaculata) - CONNECTICUT - Causing moderate injury to small field of horseradish in South Windsor, Hartford County. (Savos, Aug. 15).

SQUASH BUG (Anasa tristis) - INDIANA - Abundant in Scott and Jackson Counties and attacking commercial fields of canning pumpkins. More abundant in Tippecanoe County than for several years. (Gould).

A TORTOISE BEETLE (Cassida sp.) - LOUISIANA - Ranged 37-60, averaged 56, per 100 sweeps in sweetpotatoes in St. Landry Parish. (Spink).

CUCUMBER BEETLES - DELAWARE - Adults of Diabrotica undecimpunctata howardi present on beans throughout State; common on pumpkin squash in New Castle and Kent Counties, causing moderate feeding injury. (Burbutis, Mason). MARYLAND - D. undecimpunctata howardi and Acalymma vittata common and injuring foliage of late cucumbers in Worcester County. (U. Md., Ent. Dept.). LOUISIANA - D. balteata ranged 17-45 and averaged 31 per 100 sweeps in sweetpotatoes in St. Landry Parish. Larvae have caused considerable damage to 1960 crop. (Spink).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - Caused about 10 percent defoliation of lima beans in Stokes County. (Whitford, Farrier). OHIO - Building up on late plantings in Washington County. (Stehr).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae continue to build up on beans throughout State. Feeding injury light in most fields, but is moderate to moderately heavy in some fields in all counties. (Burbutis, Mason). MARYLAND - Light numbers of larvae noted on lima bean foliage at 1 Worcester County locality. (U. Md., Ent. Dept.).

THRIPS - WASHINGTON - An undetermined species attacking flowers of lima beans; appears to prevent pod set. (Landis).

PEA MOTH (Laspeyresia nigricana) - OREGON - Probably this species, heavily infesting peavine from Astoria south to Seaside, Clatsop County. (Capizzi).

BEEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 5 per 100 plants in sugar beet fields sampled in Park and Washakie Counties. (Fullerton). COLORADO - Larvae on potatoes numbered 10-50 per 100 sweeps in Rio Grande and Saguache Counties. (Colo. Ins. Sur.). UTAH - Flights continue moderate to light traps at Ogden, Logan, Benjamin and Salem, in northern and central areas. (Knowlton).

BLISTER BEETLES (Epicauta spp.) - OHIO - Numerous on several hosts in Ross and Sandusky Counties. (Glass, Maddy).

ONION THRIPS (Thrips tabaci) - COLORADO - Averaged 10-20 per onion plant in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.)



A WEEVIL (Brachyrhinus cribricollis) - CALIFORNIA - Adults heavy in soil in artichoke gardens in Castroville, Monterey County. (Cal. Coop. Rpt.).

A NOCTUID (Proxenus mindara) - CALIFORNIA - Heavy larval population in strawberries in San Jose, Morgan Hill and Gilroy, Santa Clara County. Larvae boring into fruit, causing considerable loss by cullage. Damage has persisted since July. Det. by George Okumura. (W. Freeman, R. Inouye).

CUTWORMS - OREGON - Large numbers of Peridroma saucia and Agrotis ipsilon collected at blacklight trap in Linn County mint fields week of August 14. Collections averaging 1-3 nightly earlier in month, rose to 40-60. (Larson).

SLUGS - WYOMING - Deroceas sp. infesting many gardens and truck crops throughout the State. (Fullerton). OREGON - Arion ater causing considerable damage to vegetable and flower gardens in coastal area of Tillamook County, from Rockaway to Tillamook. (Capizzi).

#### TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Very abundant and injurious to late tobacco in all tobacco-growing areas. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Several light to moderate infestations noted on late tobacco in Charles County. (U. Md., Ent. Dept.).

HORNWORMS (Protoparce spp.) - MARYLAND - Eggs and small larvae light to moderate on late tobacco in Charles, Calvert and St. Marys Counties. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Not a serious problem on tobacco, due to hot weather and heavy rains. (U. Md., Ent. Dept.).

GRASSHOPPERS (Melanoplus spp.) - OHIO - Damaging tobacco in Adams and Highland Counties (Mowbray, Stickley) and building up in Washington County (Stehr).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Average percent infestation in Piedmont counties was 26 in treated fields and 16 in untreated fields. Populations increasing generally. Third generation numerous and migration has moved into some upper Coastal Plain counties and lower Piedmont counties. (Cott. Lett., Aug. 16). GEORGIA - Square counts in Washington County ranged 12-99 and averaged 50 percent punctured squares. (Milner). ALABAMA - Emerged in large numbers in Tennessee Valley and Sand Mountain areas. Fields which showed light infestation prior to this time now running 25-50 percent infestation. (Arant). TENNESSEE - Migration underway in western area. Late, rank fields support heaviest infestations. Most damaging infestations below Jackson. Severe damage occurring in southern counties where migration to rank, succulent fields has occurred. Infestations in some fields as high as 96 percent punctured squares in Hardeman County. Boll damage expected if controls not applied. Counts in infested area averaged 36 percent infested squares, compared with 23 percent previous week. Infestations will continue to increase and migration to northern counties expected. Some damage occurring in Fort Pillow area of Lauderdale County. (Locke). MISSISSIPPI - Infestations generally low in delta counties. Some fields have high infestations, however, and local movement from field to field expected. Weevil activity should increase if showery conditions persist. (Merkel et al.). LOUISIANA - Average percent square infestation by parishes was as follows: Caldwell - 12; Ouachita - 15 and 10; Richland - 8 and 19; Morehouse - 4 and 18; Tensas - 10; Franklin - 15. Some migration reported; light to medium infestations reported in St. Landry Parish. (Spink). Average infestation 19 percent

in Tallulah area. (Smith et al.). ARKANSAS - Activity increasing; third-generation emergence general. Total of 6,953 fields scouted; 4,316 treated; 92.4 percent of fields scouted infested. (Ark. Ins. Rpt.). MISSOURI - Eleven percent of fields infested with percent punctured squares 0-60. (Munson, Thomas, Wood). OKLAHOMA - Populations declined in dryland cotton. Infestations in Grady County dropped to less than 4 percent in several fields. Populations in Payne County continued to decline below 3 percent. Infestations in irrigated cotton in southwest increased slightly (to 15 percent) over past week. Eastern area counts ranged 40-60 percent. (Okla. Coop. Sur.). TEXAS - Infestations averaged 30.6 percent punctured squares in 7 treated fields and 71.8 percent in 6 untreated fields in McLennan and Falls Counties. (Parencia, Cowan, Davis). Infestations ranging light to heavy and continue to cause concern in some areas of State. (Gaines, Aug. 16).

BOLLWORMS (*Heliothis* spp., et al.) - SOUTH CAROLINA - Moth and larval activity continues strong in most reporting counties. Extensive damage reported from Saluda County. Peak emergence of moths appeared at Florence. Infestations appear to be spotty throughout State, but generally present. (Cott. Lett., Aug. 16). GEORGIA - Egg counts in Washington County ranged 50-197 and averaged 134 per 100 terminals. (Milner). ALABAMA - Infestations of large numbers in all fields examined. (Arant). TENNESSEE - Increased considerably in rank cotton in western area. Infestations heavier in boll weevil-infested area. Controls needed in many fields of late cotton. (Locke). MISSISSIPPI - Moth activity remains high, but below peak of previous week. Infestations in fields in delta counties extremely spotty. Heavy egg deposition reported in some irrigated fields. Most succulent fields need protection. (Merkl et al.). LOUISIANA - Average percent square infestation by counties was as follows: Caldwell - 8; Quachita - 7 and 3; Richland - 4 and 1; Morehouse - 6 and 10; Tensas - 2; Franklin - 4. Heavy deposits of eggs continued on vigorous-growing cotton; medium infestations reported from Red River and heavy infestations from St. Landry Parish. (Spink). Average square infestation in Tallulah area 5 percent. Eggs averaged 5 and larvae 2 per 100 terminals. (Smith et al.). ARKANSAS - Fourth-generation moth emergence continues heavy; egg and larval counts high, especially in cotton with succulent growth. (Ark. Ins. Rpt.). MISSOURI - Sixty-four percent of fields scouted infested with 0-14 eggs and 0-18 larvae per 100 terminals. (Munson, Thomas, Wood). OKLAHOMA - Populations showed general increase; oviposition relatively heavy where cotton attractive. In south central area, average larval infestations rose to 17.5 percent in several fields in Grady County. Counts in Payne County lower, averaging 5 percent. In untreated areas in southwest, counts slightly higher than previous week, ranging up to 25 percent. (Okla. Coop. Sur.). TEXAS - Injurious infestations continue to occur in succulent cotton in McLennan and Falls Counties. (Parencia, Cowan, Davis). Infestations range light to heavy and continue to cause concern in some sections. (Gaines, Aug. 16). NEW MEXICO - Populations heavy in many fields in Chaves, Eddy, Lea, Luna and Dona Ana Counties; many growers treating. (N. M. Coop. Rpt.). CALIFORNIA - Heavy populations occurring on cotton in Old River and in Button-willow and Pond, Kern County. (Cal. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Cumulative acreage treated in course of May 17-July 25 aerial and ground insecticide program was 283,028. Acreage by counties was 131,667 in Maricopa, 18,025 in Pima, 132,389 in Pinal and 947 in Santa Cruz. (PPC, West. Reg.; July Rpt.). FLORIDA - One larva found in bolls of dooryard cotton removed from location just north of Homestead, Dade County, during July. This is first specimen collected from dooryard cotton since 1957. (PPC, So. Reg.).

COTTON SQUARE BORER (*Strymon melinus*) - CALIFORNIA - Light population damaging cotton in McFarland, Kern County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Continues to rag cotton in Coastal Plain. (Cott. Lett., Aug. 16). GEORGIA - Light to heavy infestations in southern area. (Johnson). TENNESSEE - Light to heavy infestations in rank cotton over western area; all fields not infested, however. Controls needed in many fields. (Locke). MISSISSIPPI - Ragging cotton in some areas of delta

counties. Control difficult due to their feeding on lower leaves. Irrigated cotton seems more attractive. (Merkl et al.). ARKANSAS - Appearing in many fields; controls applied in 22 fields for this pest. (Ark. Ins. Rpt.). OKLAHOMA - Infestations very light in all areas. Light oviposition observed in Grady County where first-instar larval counts averaged 0.5 per 100 plants. (Okla. Coop. Sur.). TEXAS - Causing damage in some sections. (Gaines, Aug. 16). NEW MEXICO - Heavy infestations in several fields in Chaves County. (N. M. Coop. Rpt.). CALIFORNIA - Heavy populations on cotton in Old River, Kern County. (Cal. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - ARKANSAS - Appearing in some cotton fields. (Ark. Ins. Rpt.). TEXAS - Causing damage in some sections. (Gaines, Aug. 16).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy population occurring on cotton in Wasco, Kern County. (Cal. Coop. Rpt.).

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Light to medium infestations continue to require control in cotton in Picacho area of Pinal County and in Marana area of Pima County. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Light infestations present throughout central and southwest areas, with characteristic "flag leaf" showing up in all areas. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Infestations general and heavy in Yuma County, with heavy foliage damage in many areas. Extremely large numbers of adults being picked up in light traps in county. Some areas of Pinal County also becoming heavily infested, while Maricopa County infestations are lighter, but increasing in some fields. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Light to moderate in cotton in southern counties. (N. M. Coop. Rpt.). ARIZONA - Counts remain high in Maricopa, Pinal, Pima and Yuma Counties; particularly in untreated fields where 40-60 percent of squares punctured in many cases. Counts in southeast average 12-15 per 100 sweeps. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - ARIZONA - Infestations continue heavy in many untreated fields of cotton in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

STINK BUGS (primarily Chlorochroa sayi) - ARIZONA - Heavy infestation in 90-acre field of cotton in Bonita area of Graham County. Light, but increased numbers present, throughout cotton-growing areas. (Ariz. Coop. Sur.).

PLANT BUGS - MISSOURI - Seventy-three percent of fields scouted infested, with 0-23 Adelphocoris rapidus, Lygus lineolaris and Psallus seriatus per 100 terminals. (Munson, Thomas, Wood).

APHIDS - SOUTH CAROLINA - Appearing in maturing cotton in all areas, some controls being applied. (Cott. Lett., Aug. 16). GEORGIA - Light infestations of Aphis gossypii in southern area. (Johnson). TENNESSEE - Aphids range light to heavy in fields treated for boll weevil and bollworms in western area. (Locke). ARKANSAS - Activity increased. (Ark. Ins. Rpt.). NEW MEXICO - A. gossypii generally light in Chaves County and light and spotty in Luna and Dona Ana cotton. (N. M. Coop. Rpt.).

SPIDER MITES - GEORGIA - Light to moderate infestations on cotton in southern area. (Johnson). ALABAMA - Infestations not increasing or spreading to any great degree. (Arant). TENNESSEE - Causing cotton to mature in many fields not controlled. Infestations will continue to spread in western area if controls not applied. Six species of mites identified as damaging in cotton in western area. (Locke). LOUISIANA - Light infestations in St. Landry Parish and medium to heavy in Red River Parish. (Spink). Counts 1.48 and 3.54 per square inch in

2 fields in Tallulah area. (Smith et al.). ARKANSAS - Activity increased. (Ark. Ins. Rpt.). MISSOURI - Forty-six percent of fields scouted had infestations. (Munson, Thomas, Wood).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - CALIFORNIA - Nearly 1,000 acres of Coulter pines in Cleveland National Forest infested by Dendroctonus brevicornis; 150 trees dying in Lost Valley and 300 trees in 10,000-acre stand in Palomar Mountain-Aqua Tibia-Mendenhall Valley area infested. (J. Pierce). An estimated 150 sugar pines and Jeffrey pines infested by D. monticolae and D. jeffreyi; young and mature trees infested in 5,000-acre stand in Sequoia National Forest; damage extends into National Park area. (J. V. Flynn). Scolytus unispinosus killing estimated 12,050 young Douglas-firs in Alderpoint, Humboldt County; damage associated with fire logging and some windthrows. (L. Squires). INDIANA - Heavy infestation of Monarthrum fasciatum in dying pin oak at West Lafayette. (Schuder).

ROUNDHEADED WOOD BORERS (Romaleum spp.) - ALABAMA - Heavy damage to large oak trees in Mobile. (Arant).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MARYLAND - Common at lights in southern sections. (U. Md., Ent. Dept.).

SAWFLIES - MINNESOTA - Heavy defoliation of jack pine by Neodiprion lecontei along Highway 23 south of Fond du Lac and 10 percent infestation in plantation near Garrison. Light populations of Diprion similis in Pine County. Pikonema alaskensis feeding about complete. Some late instars persisting but not feeding actively. (Minn. Ins. Rpt.).

SATIN MOTH (Stilpnotia salicis) - CALIFORNIA - Adults taken at a light in Hornbrook, Siskiyou County. This is a considerable distance from previous locations where moth was taken. (S. Friedman).

DOUGLAS-FIR CONE MOTH (Barbara colfaxiana) - CALIFORNIA - Damaging Douglas-fir cones in Shasta-Trinity Forest, Butter Creek area; indications of heavy infestation this year. (K. M. Estes).

FALL WEBWORM (Hyphantria cunea) - MINNESOTA - Generally distributed in north-eastern counties, feeding on various deciduous trees and shrubs such as cherry, ash, willow, poplar and alder. Heavy infestation on alder noted near Mountain Iron. (Minn. Ins. Rpt.). NORTH DAKOTA - Infestations, though light, becoming more conspicuous over a wide area. (N. D. Ins. Sur.). NORTH CAROLINA - Heavy infestation on deciduous trees in Chatham, Randolph and Catawba Counties. (Wray). Some trees almost completely defoliated. (Farrier). VERMONT - Damaging maples in Grand Isle. (MacCollom). TEXAS - Webs beginning to form on trees in several counties of north central and east areas. (Hawkins).

SADDLED PROMINENT (Heterocampa guttivitta) - VERMONT - Damaging maples in Grand Isle. (MacCollom).

A NOTODONTID (Gluphisia septentrionis) - SOUTH DAKOTA - Attacking poplars in Sioux Falls area, Minnehaha County. (Mast).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Continued damage statewide; particularly severe in Canadian, Grady, Kay and Caddo Counties. (Okla. Coop. Sur.). CALIFORNIA - Heavy populations on elms in Salinas, Monterey County; in Bishop, Inyo County; and Benton, Mono County. (Cal. Coop. Rpt.). WASHINGTON - Less damage than for several years. (Landis).

ALDER FLEA BEETLE (Altica ambiens) - CALIFORNIA - Heavy populations of adults on trees and shrubs in Palm Springs, Riverside County. (Cal. Coop. Rpt.).

CARPENTERWORMS - NORTH DAKOTA - Heavy attack of undetermined species on a 2-acre planting of ash near Killdeer, Dunn County. (N. D. Ins. Sur.). CALIFORNIA - Medium infestation of Prionoxystus robiniae on elm trees in Pleasant Grove, Sutter County. (Cal. Coop. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - NORTH CAROLINA - On mimosa in Carteret County. (Williams, Farrier). Heavy on mimosa in Davie, Iredell and Wilkes Counties. (Wray). DELAWARE - Second-generation larvae on mimosas in Kent and Sussex Counties. (Burbutis, Mason). MARYLAND - Severe on mimosa and honeylocust over State. (U. Md., Ent. Dept.).

BAGWORM (Thyridopteryx ephemeraeformis) - ALABAMA - On deodar cedars in Mobile. (Arant). OKLAHOMA - Continued reports of damage to evergreens statewide. (Okla. Coop. Sur.). DELAWARE - Larvae in most areas on cedar, mimosa, spruce and arborvitae almost completed development. (Burbutis, Mason).

CATALPA SPHINX (Ceratonia catalpae) - INDIANA - Defoliating catalpa trees in Tippecanoe and White Counties. (Schuder).

WALNUT CATERPILLAR (Datana integerrima) - WISCONSIN - Third-instar larvae nearly defoliated some walnut trees in Grant County. (Wis. Coop. Sur.).

WHITE-MARKED TUSsock MOth (Hemerocampa leucostigma) - WISCONSIN - Feeding commonly on willow and birch in Dane County but parasites apparently have reduced the insect's feeding. (Wis. Coop. Sur.).

APHIDS - NEW JERSEY - An aphid prevalent on willows in many areas of New Jersey. Heavy infestations in Bergen, Middlesex and Atlantic Counties. (Ins.-Dis. Newsl.). OKLAHOMA - Heavy infestation of an unidentified aphid on elms in Chandler area, Lincoln County. (Okla. Coop. Sur.). DELAWARE - Several species of aphids heavily infesting roses in Kent and New Castle Counties. (MacCreary).

MITES - NEBRASKA - An eriophyid mite causing russetting of honeylocusts in North Platte. (Pruess). NORTH DAKOTA - A mite on evergreen foundation plantings continues to be reported from many sections. (N. D. Ins. Sur.). VERMONT - A mite caused browning of ornamental evergreens in South Burlington. (MacCollom). NEW JERSEY - Heavy infestations of undetermined mites in chrysanthemum flower heads in Vineland area, Cumberland County. (Ins.-Dis. Newsl.). MARYLAND - Spider mites severe on English boxwood at Laurel, Prince Georges County. (U. Md., Ent. Dept.).

LACE BUGS - OKLAHOMA - High populations of an unidentified species on maple and sycamore trees in Stillwater, Payne County. (Okla. Coop. Sur.). DELAWARE - Corythucha ciliata very abundant on sycamores in areas of Sussex County and causing speckling of leaves. (Burbutis, Mason). NORTH CAROLINA - Heavy infestations of C. ciliata on sycamore in Jackson County. (Wray).

A BULB FLY (Eumerus narcissi) - CALIFORNIA - Heavy infestation in narcissus bulbs in Smith River, Del Norte County. (Cal. Coop. Rpt.).

SCALE INSECTS - CALIFORNIA - Heavy population of Parlatoria oleae on privet in Woodland, Yolo County. Medium infestation of Lepidosaphes concolor adults on Isomeris sp. in Santa Paula, Ventura County. (Cal. Coop. Rpt.).

IRIS BORER (Macronoctua onusta) - INDIANA - Heavy infestation found in local nursery at Vincennes, August 13. (Hamilton).

A BANANA APHID (Pentalonia nigronervosa) - DISTRICT OF COLUMBIA - All stages numerous on stems of Caladium bicolor growing from two tubers in a pot indoors, Aug. 7. Det. M. D. Leonard. This is apparently the second United States record of the species on this host plant, the other having been collected August 8, 1957, on Caladium sp. from Jenks, Tulsa County, Oklahoma, and det. by L. M. Russell. (M. D. Leonard).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - MINNESOTA - On livestock in Fillmore County and on cattle in Olmsted County. Det. E. Cook. First report of State. (Minn. Ins. Rpt.). ILLINOIS - Remains the number one pest on livestock. Counts in northern half of State averaged 40 flies per head and ranged 20-129 per head. A frequent occurrence of runny-eyed conditions and eye diseases observed among cattle infested with face flies. (Ill. Ins. Rpt.). VERMONT - Populations remain high over State. (MacCollom). NORTH CAROLINA - Not abundant enough to be detectable on faces of cattle in Wilkes, Rockingham and Stokes Counties. (Farrier).

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - First authenticated reports of year received this week. One infested animal intercepted at Warnerton, Washington Parish. Two interceptions of 5 animals made at Delta, Madison Parish. All animals originated out-of-State. This report includes all positive cases through July 31, 1960. (Spink).

MOSQUITOES - CALIFORNIA - Populations of Culex tarsalis and other mosquitoes fluctuated. There was a slight general increase over the State, with the highest rise being in southern area. (Vect. Cont.). UTAH - C. tarsalis population up slightly in Weber County since its peak of July 19. Aedes dorsalis, A. nigromaculis, Culiseta inornata populations generally low. Control applied. Mosquitoes numerous in Cache County meadows and about towns; some annoyance in Delta area of Millard County. (Fronk, Knowlton). TEXAS - Aedes sollicitans in small numbers in Port Arthur; A. taeniorhynchus in moderate numbers in Port Arthur, Groves and other areas of Jefferson County; A. vexans increased throughout area, while Psorophora confinnis has decreased. Anopheles quadrimaculatus increased considerably and more numerous than at any time during the last several years. (Jeff. Co. Mosq. Cont. Comm.). ALABAMA - Aedes sollicitans extremely numerous in all coastal areas. (Arant). WISCONSIN - Continuing to breed but not as annoying as last week. Culex salinarius continues to be the chief mosquito pest around homes. (Wis. Coop. Sur.). DELAWARE - A total of 221 males and 371 females of Anopheles quadrimaculatus found on red artificial resting box, Bombay Hook Refuge, August 15 through 18. (Burbutis, Mason). MARYLAND - Aedes sollicitans populations continue abundant and annoying on lower Eastern Shore but declining somewhat over previous weeks. A. vexans very annoying in Prince Georges County. (U. Md., Ent. Dept.). DISTRICT OF COLUMBIA - Aedes atlanticus collected on forehead of person, August 14, by Helen Sollers. Species relatively uncommon in the District. Det. by A. Stone. (Sollers).

HORN FLY (Siphona irritans) - ILLINOIS - Counts ranged 0-150 per animal in northern area. Infestation somewhat lower than normal, but most herds probably being treated. (Ill. Ins. Rpt.). ALABAMA - Heavy infestations over State. (Arant). UTAH - Serious problem in some Weber and Box Elder County cattle herds. Annoying livestock in Beaver, Garfield, Sanpete and Sevier Counties. (Knowlton).

A BLACK FLY (Simulium venustum) - NORTH CAROLINA - Annoying in Watauga County. (Wray).

TABANIDS - LOUISIANA - Heavy infestations of Tabanus sp. on cattle in St. John the Baptist and Red River Parishes. (Spink). OKLAHOMA - High populations of Tabanus spp. in some areas of Lincoln County. Tabanus sp., T. abactor and T. sulcifrons averaged 2.5 per animal in wooded areas of Payne County. (Okla. Coop. Sur.). UTAH - Tabanids annoying horses at Garden City, Rich County, and in Benson meadows in Cache County. (Knowlton).

STABLE FLY (Stomoxys calcitrans) - ILLINOIS - Counts averaged 2 per animal in northern area. (Ill. Ins. Rpt.). OKLAHOMA - Populations remained constant in Stillwater area. (Okla. Coop. Sur.).

FLEAS - MARYLAND - Annoying animals and humans at several localities in central counties. (U. Md., Ent. Dept.).

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Continuing to cause concern in houses in Stillwater area. (Okla. Coop. Sur.). OHIO - Infestation in home in Franklin County. (Blair).

#### STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - ARIZONA - Four infestations found during July; all were U. S. Department of Agriculture, Forest Service, Ranger Station corrals. Two of these infestations were in Yavapai County and 1 each in Gila and Maricopa Counties. Estimated volume of the 4 properties is 63,000 cubic feet. (PPC, West. Reg.; July Rpt.).

Stored-grain Insects in Texas - In stored milo, infestations of LESSER GRAIN BORER (Rhyzopertha dominica) were light in Castro and Lubbock Counties; SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) medium in Castro County; and RICE WEEVIL (Sitophilus oryza) light in Castro County. (Texas Coop. Rpt.).

#### BENEFICIAL INSECTS

LADY BEETLES - COLORADO - Hippodamia sp. reduced aphid population on barley in 1 field in Rio Grande County to level where no control was needed. (Colo. Ins. Sur.). WYOMING - Hippodamia sp. adults averaged 3 per sweep in each field of alfalfa and potatoes sampled in Big Horn Basin. (Fullerton). WISCONSIN - Appear to be particularly abundant. These predators, chiefly in corn and alfalfa, in order of relative abundance, are: Hippodamia parenthesis, H. convergens, H. tredecimpunctata, Cycloneda munda, Coccinella novemnotata, Adalia bipunctata, Chilocorus stigma, Anisosticta strigata and Stethorus vagans. (Wis. Coop. Sur.).

NABIDS (Nabis spp.) - WYOMING - Averaged 4 adults per 25 sweeps in alfalfa and potato fields sampled in Big Horn Basin. (Fullerton). COLORADO - Populations of N. ferus increased in potato fields in Weld County from 25 to 50 per 100 sweeps. (Colo. Ins. Sur.). WISCONSIN - Are particularly abundant, especially in corn and alfalfa. (Wis. Coop. Sur.).

LACEWINGS (Chrysopa spp.) - WISCONSIN - Populations are abundant, especially in corn and alfalfa. (Wis. Coop. Sur.).

PARASITES - WISCONSIN - Various parasites frequently noted, principally in corn and alfalfa, include Ophion spp., Apanteles spp., Trichogramma minutum and Lydella grisescens. (Wis. Coop. Sur.).

HONEY BEE (Apis mellifera) - CALIFORNIA - Inspection of 102,209 colonies indicates American foulbrood disease is present in 2,771 colonies; apiaries inspected totaled 2,826, with the disease present in 605. (Cal. Coop. Rpt.).

ALKALI BEE (Nomia melanderi) - WYOMING - Activity almost stopped in Fremont County in alfalfa seed-producing areas. (Fullerton).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - Adult prevalence throughout MAINE, NEW HAMPSHIRE and VERMONT declined considerably. Airfields continued to be checked, with negative results. Except in Concord, Keene and Walpole, New Hampshire, where heavy adult concentrations were observed, fewer numbers and lighter feeding were reported during 1960 than in 1959. (PPC). Adult feeding still severe in Burlington area of Vermont, particularly on grapes and roses. (MacCollom). Medium to heavy populations present at airports at Meriden, Bridgeport, Danbury, Waterford and Trumbull, CONNECTICUT, and light to medium at

Windham Airport. In MASSACHUSETTS, heavy populations exist at Otis AFB and at the private field at Palmer; populations at 21 other airports inspected were very light or negative. Populations in RHODE ISLAND were very light at Hills-grove, Newport and Quonset Naval Base. All other airports in Connecticut-Massachusetts-Rhode Island were negative. Foliage treatment and aerosoling, or both where necessary, are being used at all airports where beetles were found. Adult population rapidly declining in PENNSYLVANIA. Practically no adult activity at Port Erie Airport in western area of State. At Greater Pittsburgh Airport, 3 adults were removed from passengers before entering planes; numerous beetles observed on roses in front of Administration Building. No hazard at Williamsport Airport or Olmsted AFB, in central part of State, and controls suspended. Aerosoling and foliage treatment terminated in eastern part of State August 16. (PPC). Specimen collected on airline flight at Tampa International Airport, Hillsborough County, FLORIDA, on July 19 by C. H. Lynch. Det. by R. E. Woodruff. Female specimen was taken alive in baggage compartment of a plane at Miami International Airport, Dade County, on August 5 by H. L. Brandt. Det by W. Breidenbach. (Fla. Coop. Sur.).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - An estimated 10,000 additional acres found infested in upstate area during summer by scouting and trapping activities. Extensive additions noted at Elmira and Southport, Chemung County; at Lockport and Niagara Falls, Niagara County; and in Buffalo, Erie County. Infestation at Southport approximately  $4\frac{1}{2}$  miles north of Pennsylvania State line. Also, an additional site found infested at Chittenango, Madison County. NEW JERSEY - Delimiting surveys in Caven Point area of Hudson County show that infestation extends westerly from Caven Point to exits A, B and C along New Jersey Turnpike Extension. Nurseries and other sites inspected in Atlantic, Cumberland, Gloucester and Monmouth Counties were negative. CONNECTICUT - Specimens caught in nets at Meriden infestation. WEST VIRGINIA - Trapping operations conducted June 9-July 16 in Capon Bridge were negative. (PPC, East. Reg., July Rpt.).

ORIENTAL BEETLE (Anomala orientalis) - FLORIDA - Collected from plane at Tampa International Airport, Hillsborough County, on July 20 by R. G. Racine and C. H. Lynch. (Fla. Coop. Sur.).

STRAWBERRY ROOT WEEVILS - NORTH DAKOTA - Reports of adults of unspecified species entering homes in eastern section of State appear more numerous this year. (N. D. Ins. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - ARIZONA - Large adult numbers a problem around homes in some areas of Navajo and Apache Counties. (Ariz. Coop. Sur.).

VESPID - RHODE ISLAND - Many complaints concerning elimination of nests of various species. (Mathewson). DELAWARE - Vespa spp. unusually abundant this year; causing considerable annoyance. (Burbutis, Mason).

WESTERN HARVESTER ANT (Pogonomyrmex occidentalis) - OKLAHOMA - In Harper County, colony density is 104 per mile of highway roadside, an increase over same area in 1959. (Okla. Coop. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - RHODE ISLAND - Adults relatively scarce in Narragansett area. Few complaints received from elsewhere. (Hansen). UTAH - Numerous at Kanab and becoming commoner pest elsewhere in Kane County. (Knowlton).

A FIELD CRICKET (Acheta sp.) - NEBRASKA - Large populations migrating to buildings in Lincoln, Lancaster County. (Kantack).

#### CORRECTION

CEIR 10(34):792 - NABIDS (Nabis spp.) - COLORADO - N. feris should read N. ferus.



LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith	Trich. ni	Perid. saucia	Heliothis zea	vires.
<b>ALABAMA</b>							
Auburn 8/16,19	7	39	15	28		560	6
<b>ARKANSAS</b>							
Hope 8/4-17	37				4	81	
*Morrilton 8/4-17	27					158	
Kelso 8/4-10	7					27	
Fayetteville 8/4-17	19					217	
<b>CALIFORNIA</b>							
Davis 8/10-16	131			51	8	67	
<b>FLORIDA</b>							
Gainesville 8/9						10	
Quincy 8/1						63	4
<b>ILLINOIS</b>							
Urbana 8/12-18	83	9	15	13	23	10	
<b>INDIANA (Counties)</b>							
Lawrence 8/9-13,15	96		46			3	
Tiptecanoe 8/12-17	23		7				
Vanderburgh 8/11-16	240		58			38	
<b>LOUISIANA</b>							
Baton Rouge 8/12-18	6	2,029	51	9		119	
Franklin 8/18	2		22			79	
Tallulah 8/19	40		44	33		84	1
<b>MAINE</b>							
Monmouth 8/14-20	2						
<b>MARYLAND</b>							
Fairland 8/1-9	16				2	7	
<b>MISSISSIPPI</b>							
*Stoneville 8/12-18	443		126	1,151	1	449	24
<b>MISSOURI</b>							
Sikeston 8/13-19	25				1	549	
<b>NEW JERSEY (County)</b>							
Burlington 8/18,22	118		64			157	
<b>SOUTH CAROLINA</b>							
Charleston 8/15-21	7	447	70	45		416	18
<b>TENNESSEE (County)</b>							
Blount 8/9-15	6		40		4	12	
<b>TEXAS</b>							
Waco 8/13-19	74		146	3,379	115	2,040	21
<b>WISCONSIN</b>							
*Janesville 8/9-15	39						
Platteville 8/9-12	2				1		

\* Two traps - Morrilton, Stoneville, Janesville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Prod. ornith	Trich. ni	Perid. saucia	Heliothis zea vires.
WISCONSIN						
Middleton 8/9-15	3				1	
*Arlington 8/9-15	57				25	
*Theresa 8/9-15	23					
Oakfield 8/9-15	11					
Antigo 8/9-15	8				6	

Additional Collections

CALIFORNIA - (Davis - 8/10-16); Spodoptera exigua - 2,662.

\* Two traps - Arlington; 3 traps - Theresa.

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HAWAIIAN INSECT NOTES

A NITIDULID (Conotelus mexicanus Murray) was reported by F. A. Bianchi as being collected on Sida spp. at Pahala, Hawaii, on June 21. This insect was reported from Oahu in March 1955, and its collection on the island of Hawaii constitutes a new island record. Mr. Bianchi also reported on an unidentified HIPPOBOSCID which he found on his own person immediately after handling a native owl (Assio flammeus sandwichensis) at Grove Farm Plantation, Kauai, on June 30. The ENCYRTID reared from Antonina graminis (reported in CEIR 10 (31):723) was identified by the U. S. National Museum as Dusmetia sangwani Rao. This species was introduced into Texas from India in 1958. It is not known how it entered Hawaii. (Hawaiian Entomological Society, August 8, 1960, meeting).

STATUS OF SOME MORE IMPORTANT INSECTS IN THE UNITED STATES

CARROT RUST FLY (Psila rosae (F.))

**Economic Importance:** This insect, known as a pest in Europe, was first discovered in North America in 1885 at Ottawa, Canada. Its initial occurrence in the United States was reported from Somerset County, Maine, in 1893. On occasion, it is locally serious on umbelliferous crops. Injury to carrots and parsnips invariably occurs below the soil surface. First larval feeding causes narrow, rust-colored furrows and irregular areas in the outer epidermis, and later small round tunnels are made through the root. Small carrots may be killed when feeding cuts off the hair roots and by the entrance of fungus rots into the larval tunnels. More often the plants are stunted temporarily and develop into bulbous and "many-legged" carrots when growth is resumed. Celery and parsley plants may be stunted when the roots are eaten. Occasionally tunnels are made through the fleshy stems above ground.

**Distribution:** Austria, Australia, Canada, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Italy, Latvia SSR, Netherlands, New Zealand, Norway, Poland, Sweden, Switzerland and the United States (see map).

**Hosts:** Carrot is the preferred host and only members of the family Umbelliferae are known to be attacked. Some of these are as follows: parsnip, parsley, celery, coriander, caraway, fennel, dill and poisonhemlock.

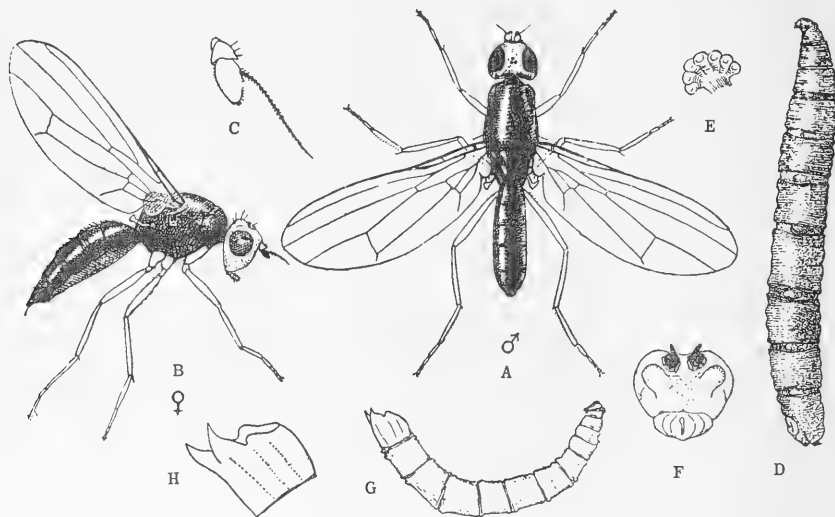
**Life History and Habits:** Larvae thrive under cool, damp conditions, and adults emerge from overwintering pupae in early May when temperatures average 55-65 degrees F. Slightly or moderately moist soil is most favorable for emergence. The adult lives, on an average, about 4.3 days. Although eggs may be found in groups, they are laid singly in crevices and among pellets of soil. Hatching

DISTRIBUTION OF CARROT RUST FLY (Psila rosae (F.))



occurs in 3-17 days depending upon temperature. Development of larvae in carrots lasts about 4 weeks. Second-generation adults appear from early July to late August and oviposit soon after emergence. Young larvae feed until freezing weather. As carrots are dug and stored before freezing weather, larvae continue to feed in stored carrots. In some areas there is a third generation. Pupation takes place 4-5 days after the larvae enter the soil. Overwintering occurs in this stage, 4-6 inches below the soil surface, within a few inches of the plant in which the larval development took place.

**Description:** EGG - White, oblong, about four times as long as broad, length 0.6 mm. - 1.0 mm. Marked longitudinally by narrow ridges and furrows, circular pits in the furrows causing sculpture to resemble the surface of a peanut shell. Constricted at one end, forming a knob or pedicel about one-third the width of the widest part of the egg. LARVA - Length 6-9 mm., width 1-2 mm. Generally colorless with white opaque spots when newly hatched, later turning creamy-white and gradually darkening until dark straw-yellow when mature. Head sharply pointed with prominent black mouth hooks. Cauda blunt and with a pair of dark colored caudal spiracles. PUPA - Length 4.5-5 mm., width 1.0-1.25 mm. Bright amber-brown, compact cauda blunt. ADULT - Length 4.5-5 mm., males slightly smaller than females. Wings thin, slightly iridescent, extending nearly half their length beyond the abdomen. Abdomen and thorax shiny, black, sparsely clothed with short, yellowish hairs. Head and legs pale yellowish-brown, eyes black. Male abdomen rounded at apex, female's sharply pointed. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(35): 8-26-60



Figures of *Psila rosae*: A, male fly; B, female fly, lateral view; C, antenna of male; D, full-grown larva, lateral view; E, spiracles of same; F, anal extremity from the end; G, young larva; H, anal segment from side.



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**Cooperative**

**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
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## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPERS continue to damage crops in localized areas of Indiana and Ohio and FIELD CRICKETS high in sections of North Dakota. (p. 823). FALL ARMYWORM continues destructive in Alabama, Mississippi and Louisiana and infestations reported in Missouri, Indiana and New York. (pp. 823, 824, 840). SOUTHWESTERN CORN BORER survey reported in northeastern Texas. (p. 824). TWO-SPOTTED SPIDER MITE continues to damage corn in Utah, Wyoming and Colorado. ALFALFA CATERPILLAR infestations increasing in Arizona; moderately heavy in Chaves County, New Mexico; and light to moderate in Frederick County, Maryland. (p. 825). SPOTTED ALFALFA APHID heavy in areas of California and New Mexico and increasing in some areas of Colorado. Economic populations of LYGUS BUGS present in alfalfa in Nevada, Arizona and Wyoming. (p. 826).

IMPORTED CABBAGEWORM and CABBAGE LOOPER egg deposition heavy on crucifers in several Northern areas and eggs and young larvae of latter species becoming very abundant on seedling lettuce in Mesilla Valley of New Mexico. (p. 830).

HORNWORM controls applied to tobacco in Ohio and larvae apparently more abundant than in 1959 in southern Wisconsin. Several heavy second-brood infestations reported in tobacco in St. Marys County, Maryland. (p. 830).

BOLL WEEVIL and BOLLWORMS continue to increase in cotton; damage reported in a number of areas. (p. 831). CABBAGE LOOPER infestations in cotton reduced in Tennessee, but still damaging in Mississippi, Louisiana, Oklahoma, New Mexico and Arizona. SALT-MARSH CATERPILLAR infestations increasing on cotton in Arizona. (p. 832).

WHITE-PINE WEEVIL continues at high level throughout Northeast; TWIG PRUNER more common than usual in Vermont, Massachusetts and Connecticut; GYPSY MOTH defoliation generally equivalent to previous high of 1951 in Vermont; SPRUCE BUDWORM heavily defoliated 5,000 acres of balsam fir in northern Maine; and ELM LEAF BEETLE injury moderate in Willamette Valley of Oregon, moderate to heavy in northwestern Oklahoma and noted on maples in Madison County, New York. (pp. 833, 834).

FACE FLY noticeable in Michigan and very annoying to cattle in many areas throughout northern Indiana. Also annoying in Maryland, Wisconsin and Missouri. (p. 836). MOSQUITOES heavy and annoying in several states. HORN FLY conspicuous on untreated beef cattle in Sanpete and Millard Counties, Utah, and medium to heavy in St. John the Baptist Parish, Louisiana. STABLE FLY moderate to severe in feed lots in eastern Nebraska. (p. 836).

CORRECTIONS (p. 838).

ADDITIONAL NOTES (p. 840).

INSECT DETECTION: New and probably new state records reported were western corn rootworm in Missouri (p. 825); dusky sap beetle in Wisconsin (p. 825); leaf rollers (Pandemus lamprosa and Choristoneura parallela) in Delaware (pp. 827, 830); a leaf miner (Phyllocnistis liquidambarisella) in Delaware (p. 835); and a lady beetle (Scymnus puncticollis) in South Carolina (p. 837). New county records were reported for face fly in Illinois (p. 836) and white-fringed beetles in Arkansas (p. 825).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS (p. 842). NOTE: This is the first of a series of tables that will be published in the CEIR during the next several weeks. Separates will be available upon request.

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Reports in this issue are for week ending August 26, unless otherwise indicated.

WEATHER OF THE WEEK ENDING AUGUST 26

This week's mean temperatures were much below normal in nearly all of the Far Western States, except eastern areas of Colorado and southeastern New Mexico. Above-normal temperature readings were general in the southern Great Plains, extending through the upper Mississippi Valley to the Great Lakes region. Eastern New England and some sections of the middle Atlantic coast also reported above-normal temperatures. Near-normal temperatures prevailed in most of the South Atlantic States, the lower Mississippi Valley, and Gulf coastal areas, while in localized sections of Georgia and the Carolinas and temperatures were a few degrees below normal. The largest departures from normal were centered over the northern Rockies and northern Intermountain Basin, where readings averaged 9° to 15° below normal. A cold front moved through the Intermountain area on August 22, producing sharp temperature drops, which culminated in a severe freeze on the morning of the 23d. Three stations in Nevada set alltime lows for August -- Reno 30°, Winnemucca 28°, and Ely 24°; Elko had 25°, just 1° above its alltime August low. A midweek southward push of Canadian cold air also lowered temperatures in North Dakota and Montana, with record lows for August occurring in the latter State.

Significant precipitation has occurred in the central and northern Great Plains, upper Great Lakes region, and Gulf coastal areas. Moderate to locally heavy rains fell in the Carolinas, Georgia, and southern Appalachian sections, while light to a virtual absence of rainfall was reported in New England, along the middle Atlantic coast, and in the lower Great Lakes region. The southwestern section of the country was again devoid of rain and this resulted in a high fire hazard in Nevada where many thousands of acres of forest lands were blackened. The central and northern Rockies, and the north portion of the Pacific coast received light to moderate intermittent thundershower rainfall, while some high mountain areas received light snowfall. Locally heavy rains have been recorded in some areas of Texas, Oklahoma, Kansas, Nebraska, South Dakota, Louisiana, Mississippi, Minnesota, and Wisconsin. A total of 9.35 inches was recorded in northwestern Wichita, Kansas, while Litchfield and Coon Rapids, Minnesota, measured 6.09 and 6.14 inches, respectively, in 24 hours. Damaging frost occurred in northern sections of California, and some gusty winds up to 50 m.p.h. were reported in interior sections of north and central California. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OKLAHOMA - Localized infestations damaging margins of alfalfa and grain sorghum in Woods, Payne and Cotton Counties; also pastures and rangeland areas in Kingfisher and Cotton Counties. Light, 3 per square yard, in margin of field in Washita County. (Okla. Coop. Sur.). ARKANSAS - Annual adult survey conducted in 16 counties in western area. Average number lower than in past few years. Few local, heavy infestations observed. These infestations relatively small and are result of several years buildup without treatment. (Ark. Ins. Rpt.). NORTH DAKOTA - Damage to soybeans, flax and alfalfa reported from many areas. Controls to protect late crops continued in some sections. (N. D. Ins. Sur.). SOUTH DAKOTA - Adult survey completed in eastern half of State. Infestations very spotted. (Mast). WISCONSIN - Adult Melanoplus femur-rubrum surveys underway. Average number per square yard in different counties was: 7 in Dodge, 10 in Jefferson, 13 in Dane, 12 in Oconto, 15 in Shawano, 17 in Marquette, 13 in Waushara, 8 in Marinette, 13 in Green Lake and 24 in Waupaca. (Wis. Coop. Sur.). INDIANA - Melanoplus spp. continue to damage soybeans, corn and tomatoes in field margins in localized areas throughout State. Adult counts 1-30 per square yard. Dominant species M. femur-rubrum, M. differentialis and M. bivittatus. Few M. bilituratus collected in Tippecanoe County. (Matthew). Counts in north-eastern area range 1-30 per square yard in alfalfa and clover in localized areas. Dominant species M. femur-rubrum and M. bivittatus. (Florentine). OHIO - Melanoplus spp. damaging shrubs in Pickaway County; flowers and shrubs in Franklin County. Controls applied in soybeans in Sandusky County and in corn in Muskingum County. (Maddy, Knotts, Blair).

FIELD CRICKETS - NORTH DAKOTA - High populations of black crickets continue in eastern and some northern sections. Controls applied in some sections to protect flax from cricket injury. (N. D. Ins. Sur.). SOUTH DAKOTA - Very abundant in alfalfa, soil bank lands, stubbles and around homes. (Mast).

CORN EARWORM (Heliothis zea) - NEW YORK - Larval infestations in untreated sweet corn ears at Poughkeepsie evidently under 20 percent. Most larvae still small. (N. Y. Wkly. Rpt., Aug. 22). MARYLAND - Moths at highest peak of season in black-light trap at Fairland, Montgomery County, August 16-23. (U. Md., Ent. Dept.). MICHIGAN - Larvae extremely light at Detroit, Sodus and Monroe. (Hutson, Aug. 24). WISCONSIN - Larvae very low in northwestern area. Overall populations will apparently nowhere near approach those of 1959 at first frost. (Wis. Coop. Sur.). MISSOURI - Light infestations in heads of grain sorghum in south central area. Larvae ranged 0-15 per 100 heads in tight-headed varieties. No larvae found in loose-headed plants. (Munson, Thomas, Wood). OKLAHOMA - Light in alfalfa over State (up to 0.5 per sweep); common in grain sorghum (10-25 percent of heads infested) and corn in most areas; and light to medium in peanut fields in south central area (up to 0.8 per linear foot). Very light, less than 0.3 percent of pods infested, in field of cowpeas near Keota. (Okla. Coop. Sur.). COLORADO - Eggs 0-3 per 10 corn ears in Otero County. (Colo. Ins. Sur.). ALABAMA - Heavy in alfalfa in Houston County; light to moderate in peanuts in Henry, Houston and Dale Counties; and light in grain sorghum in Henry, Houston and Coffee Counties. Adults plentiful in both grain sorghum and peanut fields in previously mentioned counties. (Grimes, Banks). NEVADA - Light to medium on corn in Las Vegas. (Bechtel).

FALL ARMYWORM (Laphygma frugiperda) - NEW YORK - Larvae observed in sweet corn in whorl stage in Hudson Valley. (N. Y. Wkly. Rpt.). MARYLAND - Infestations light to moderate in late corn for silage in Frederick and St. Marys Counties. (U. Md., Ent. Dept.). SOUTH CAROLINA - Scattered infestations in Bermuda grass in Coastal Plain; some infestations in soybeans. (Nettles et al., Aug. 17). ALABAMA - Infestations light to moderate in millet and grain sorghum in Houston, Dale and Coffee Counties. Although larvae limited, severe "ragging" of millet occurred in Houston County. (Grimes, Banks). Continues to cause concern in central and northern area; heavy infestations as far north as Lamar, Pickens, Jefferson, Calhoun and Cherokee Counties. (Ruffin). Pastures in Washington County heavily damaged. (Seibels). LOUISIANA - Heavy infestations in all areas of State, including Evangeline, East Feliciana, St. Landry, Livingston, St. John the Baptist and

Washington Parishes; spotty, heavy in Tensas and Franklin Parishes; larvae as high as 600 per foot of row in grain sorghum in Tensas Parish. Larvae appearing in lawns in East Baton Rouge and St. John the Baptist Parishes. (Spink). OKLAHOMA - Larvae light in grain sorghum heads in northwest. (Okla. Coop. Sur.). MISSOURI - Damaging late corn in northwest. (Munson, Thomas, Wood). INDIANA - Larvae in whorls of late-planted corn in localized southern areas. (Matthew).

ARMYWORM (Pseudaletia unipuncta) - OHIO - Controls necessary in cornfield in Muskingum County. Little evidence of parasitism. (Knotts).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NEW YORK - Moth emergence in screen-house reached peak about August 1 at Poughkeepsie. Second-brood larvae in field ranged up to fourth instar. Larvae entering ear tips in small percentage of ears. (N. Y. Wkly. Rpt., Aug. 22). MARYLAND - Larval infestations, apparently second brood, increasing in field corn in all sections. Moderate numbers in field corn ears in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Egg masses present on corn throughout State; light trap collections of moths continue to increase. (Burbutis, Mason). WISCONSIN - Major flight of second-generation adults began August 21 and 22 in southern counties. Egg hatching noted August 19 in Rock and Jefferson Counties; heavy hatching expected by August 27. Egg mass counts per 100 plants 60 in Columbia County, 35 in Iowa County and 16 in Marquette County. Counts vary considerably between fields, however. (Wis. Coop. Sur.). NEBRASKA - Second-generation moths still alive; egg laying in progress, but scattered. Infestations moderate to heavy in northeast and south central sections. (Bergman).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - TEXAS - Total of 1,708 acres of corn surveyed by Federal and State workers in 12 northeast counties during period August 22-25. Average percent infestation by counties was: 63 in Delta, 56 in Bowie, 30 in Franklin, 40 in Harrison, 47 in Morris, 58 in Camp, 65 in Lamar, 60 in Red River, 75 in Titus, 80 in Hunt, 45 in Cass and 50 in Hopkins. (Texas Coop. Rpt.).

BLACK CUTWORM (Agrotis ipsilon) - MARYLAND - Moderately injuring young corn locally in St. Marys County. (U. Md., Ent. Dept.).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Very light larval infestations in sorghum in south central area. Counts ranged 0-10 first to second-instar larvae per 100 heads. (Munson, Thomas, Wood). ALABAMA - Light infestations on grain sorghum in Houston County. (Grimes, Banks).

SOD WEBWORMS - NORTH DAKOTA - Several lawn infestations observed in Fargo area; injury light to moderate. Predators active. (N. D. Ins. Sur.). OKLAHOMA - Infestations of Crambus mutabilis continue to damage some lawns in Woodward; 50 percent of larvae now pupated. Also beginning to damage some lawns and golf greens at Stillwater. (Okla. Coop. Sur.).

RICE STINK BUG (Oebalus pugnax) - LOUISIANA - Ranged 20-48 per 100 sweeps in 2 fields of rice in Evangeline Parish. (Spink).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Common, but generally light, in grain sorghum in northwest area. Heavy numbers locally in Major County. (Okla. Coop. Sur.).

GRAIN APHIDS - IDAHO - Unspecified species infesting all late barley in Jefferson County. Populations range light to heavy; also found in oats and wheat. (Gooch).

CHINCH BUG (Blissus leucopterus) - TEXAS - Heavy infestations observed on corn in Hunt and Delta Counties; all stages observed. (Hawkins, Ridgeway).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Heavy infestation in St. Augustine grass lawns locally in Houston and Dallas Counties. (Grimes, Banks, Granberry).

A BILLBUG (Calendra phoeniciensis) - NEW MEXICO - Becoming a problem in Bermuda grass lawns in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt.).

DUSKY SAP BEETLE (Carpophilus lugubris) - WISCONSIN - Adults collected August 17 at Prairie du Chien, Crawford County. Det. by W. A. Connell. As far as known, this is the first record of the insect in the State. (Wis. Coop. Sur.). DELAWARE - Adults reduced in number throughout State; larvae more prevalent in ears of corn in southern portion of State. (Burbutis, Mason).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEBRASKA - Adults averaged 83 per 10 sweeps in alfalfa in southeast. (Bergman).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - SOUTH DAKOTA - Adults averaged 3 per 10 sweeps in Charles Mix and Bon Homme Counties, southeast area. (Mast). NEBRASKA - Adults averaged 9 per 10 sweeps in alfalfa in southeast. (Bergman).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MISSOURI - Collected in Atchison and Holt Counties. First report in the State. (Munson, Thomas, Wood). NEBRASKA - Adult rootworm survey in progress in all eastern and southern counties. This species appears dominant in corn in all areas surveyed, with exception of northern border of State. Adults in alfalfa averaged 10 per 10 sweeps. (Bergman).

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - NEVADA - Averaged 20-30 adults per corn plant in Las Vegas, Clark County. (Bechtel, Parker).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ARKANSAS - Four additional infestations recently found in St. Francis, Greene and Craighead Counties; first record for Craighead County. First found in State in St. Francis County in 1959. (Ark. Ins. Rpt.).

AN EARWIG (undetermined) - WYOMING - Feeding on ears of sweet corn in Laramie County. (Spackman).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - UTAH - Now most serious problem of agriculture in Salt Lake County; some corn severely damaged. (Knowlton). COLORADO - Damage on lower 3-5 leaves of corn in Larimer, Weld, Boulder and Adams Counties; infestations occurring on seventh and eighth leaves in Otero County. (Colo. Ins. Sur.). WYOMING - Infesting many fields of corn in Platte, Goshen and Laramie Counties; controls ineffective. (Fullerton).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - IDAHO - Adults numerous in Cassia County alfalfa (Hopkins) and larvae abundant and causing damage in alfalfa near Bruneau (Mink). In Jefferson County, larvae moving from Russianthistle. (Gooch). UTAH - Generally present, but not numerous, in Millard and Sanpete County alfalfa. (Knowlton). ARIZONA - Infestations continue to increase in alfalfa statewide, averaging 6-8 larvae per 10 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Moderately heavy larval infestations damaging alfalfa in Chaves County. (N. M. Coop. Rpt.). SOUTH DAKOTA - Adults very active in alfalfa in southeast. (Mast). WISCONSIN - Adults numerous. Larvae averaged 1 per linear yard along a highway. (Wis. Coop. Sur.). MARYLAND - Larvae light to moderate on alfalfa in Frederick County. (U. Md., Ent. Dept.).

ALFALFA LOOPER (Autographa californica) - IDAHO - Larvae fairly abundant in some alfalfa in Canyon County. (Bechtolt).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - SOUTH CAROLINA - Few found on most soybeans in Allendale County; no controls warranted. (Nettles et al., Aug. 17). ALABAMA - Infestations light on peanuts in Barber County; limited number of larvae found in Dale County. Few specimens found on kudzu in Bullock County. (Grimes, Banks).

RED-NECKED PEANUTWORM (Stegasta basqueella) - OKLAHOMA - Counts ranged up to 0.8 per linear foot of row in few fields of peanuts in south central area. Causing localized damage in Pottawatomie County. (Okla. Coop. Sur.).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Loxostege sp. common in alfalfa in northwest; 0.1-1.5 per sweep. (Okla. Coop. Sur.). MISSOURI - Counts of L. similalis in area of south central section ran as high as 35 larvae per sweep. Severe defoliation occurred in 2 of these alfalfa fields. (Munson, Thomas, Wood).

SPOTTED ALFALFA APHID (Therioaphis maculata) - CALIFORNIA - Heavy populations now occurring over Antelope Valley, Los Angeles County. Alates numerous; heavy honeydew, with little sooty mold so far. (A. S. Deal). Heavy on first-year alfalfa stubble in the Highway 99-Consumnes River area, Sacramento County. (W. Golden). NEVADA - Averaged 0-5 per sweep in Fish Lake Valley, Esmeralda County, and Las Vegas, Clark County; averaged 20 per stem in 40-acre alfalfa seed field in Pahrump Valley, Nye County. (Bechtel, Parker, Zoller). NEW MEXICO - Many alfalfa fields in Chaves and Eddy Counties heavily infested. (N. M. Coop. Rpt.). OKLAHOMA - Generally light in alfalfa in northwest; counts 5-20 per sweep. Light in localized areas of Payne County and apparently increasing in Love County. (Okla. Coop. Sur.). MISSOURI - Counts on alfalfa in southwest and south central areas ranged 0-80 per sweep; highest counts in older, taller stands. (Munson, Thomas, Wood). COLORADO - Populations increasing in alfalfa in some areas of State. In Otero County, counts have been 200-500 per 100 sweeps; 50-75 per 100 sweeps in Mesa County; 12-25 per 100 sweeps in Delta and Garfield Counties; 5-100 per 100 sweeps in Boulder County. (Colo. Ins. Sur.).

PEA APHID (Macrosiphum pisi) - CALIFORNIA - Infesting clover in Wilton area. (W. Golden). NEVADA - Averaged 5-10 per sweep in alfalfa in Douglas County. (Parker, Aug. 19). Only occasional specimens found in alfalfa in Fish Lake Valley, Esmeralda County; averaged 50-100 per sweep in Pahrump Valley alfalfa seed fields, Nye County. (Bechtel, Parker, Zoller). UTAH - Some buildup in succulent alfalfa in parts of Salt Lake County. Generally low in alfalfa seed fields in Millard County, due to conspicuous numbers of lady beetles, Nabis alternatus and sp., Geocoris spp., and Orius tristicolor, particularly. (Knowlton). IDAHO - Populations greatly reduced in alfalfa in Canyon County. Lady beetles and lacewing larvae very abundant in most fields. (Bechtolt). Heavy, spotted populations found on alfalfa near Mountview. (Gooch). Plentiful in 20-acre field near Idaho Falls; lady beetles also plentiful. (Kohl). WYOMING - Averaged 30 per sweep in alfalfa in Goshen and Laramie Counties. (Fullerton). COLORADO - Counts 10-250 per 100 sweeps in Larimer, Weld, Boulder and Adams Counties; 100-300 per 100 sweeps in Montrose, Mesa, Delta and Garfield Counties. (Colo. Ins. Sur.). NEBRASKA - Counts 30-50 per 10 sweeps in southeast. (Bergman). WISCONSIN - Populations increasing in southern area. (Wis. Coop. Sur.). DELAWARE - Counts generally below 5 per sweep. (Burbutis, Mason).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Ranged 4-18 per sweep on alfalfa in Frederick County. (U. Md., Ent. Dept.). DELAWARE - Adults averaged 5 per sweep in alfalfa locally in New Castle County and remain present on soybeans and alfalfa throughout rest of State. (Burbutis, Mason). NEBRASKA - Averaged 36 per 10 sweeps in alfalfa in southeast. (Bergman).

LYGUS BUGS (Lygus spp.) - NEVADA - Averaged 20-40 per sweep in alfalfa in Douglas County. (Parker, Aug. 19). COLORADO - Counts 40-150 per 100 sweeps in alfalfa in Mesa, Delta and Garfield Counties; 50-100 per 100 sweeps in Otero County. (Colo. Ins. Sur.). ARIZONA - Heavy infestations damaging alfalfa grown for seed in Yuma and Pinal Counties. (Ariz. Coop. Sur.). WYOMING - Adults averaged 8 per sweep in alfalfa in Goshen and Laramie Counties. (Fullerton).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations remain high in alfalfa statewide. (Ariz. Coop. Sur.).

CONSPERSE STINK BUG (Euschistus conspersus) - CALIFORNIA - Heavy populations on alfalfa in Westhaven, Fresno County. (T. Leigh).

PLANT BUGS - NEBRASKA - Counts per 10 sweeps in southeastern area are as follows: Adelphocoris lineolatus - 4-7; Adelphocoris sp. - 2; and Lygus lineolaris - 14-20. (Bergman). DELAWARE - Adults and nymphs of A. lineolatus, A. rapidus and L. lineolaris present on alfalfa. (Burbutis, Mason).

A WHITEFLY (prob. Trialeurodes sp.) - DELAWARE - Building up considerably in alfalfa and soybeans throughout State, with some yellowing of leaves apparent. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Causing light to moderate foliage injury to soybeans on lower Eastern Shore. (U. Md., Ent. Dept.).

CLOVER SEED CHALCID (Bruchophagus gibbus) - NEVADA - Light in seed alfalfa in Pahrump Valley, Nye County. (Bechtel, Parker, Zoller).

SNOWY TREE CRICKET (Oecanthus niveus) - SOUTH DAKOTA - Found in many alfalfa fields, 20-30 per 10 sweeps, in Day, Marshall, Brown, Spink and Faulk Counties. Damage unknown. (Mast).

STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - OREGON - Infestations in alfalfa occurred near Nyssa beginning in mid-August. (Stephen).

#### FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NEW YORK - Few pupae still being found in bands in Monroe County; stings not difficult to find in orchards in Wayne County, where weak first-brood program was carried out; some late stings and entries observed on pears in Orleans County from late first brood or early second brood. (N. Y. Wkly. Rpt., Aug. 22). NEW JERSEY - Few fresh entries on apples in Burlington County. (Ins.-Dis. Newsl., Aug. 23). WEST VIRGINIA - Damaging apples in a few eastern panhandle areas. (W. Va. Ins. Sur., Aug. 22). WISCONSIN - Second-generation moths now emerging in Door County. (Wis. Coop. Sur.). COLORADO - Larvae well under control in Mesa, Montrose, Delta and Garfield Counties. (Colo. Ins. Sur.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - NEW YORK - Not a problem in Monroe County. Larvae appearing in few Wayne County orchards, but not as severe as in 1959; larvae appearing in some blocks in Orleans County, especially near Lake Ontario. (N. Y. Wkly. Rpt., Aug. 22). WEST VIRGINIA - Increasing on apples in eastern panhandle area, and threatening damage before harvest. (W. Va. Ins. Sur., Aug. 22). WISCONSIN - In Door County, moth populations range moderate to heavy. (Wis. Coop. Sur.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - NEW JERSEY - Few fresh entries noted in apples during past week in Burlington County. (Ins.-Dis. Newsl., Aug. 23). NEW YORK - Injury evident on peaches in Orleans County where not protected. (N. Y. Wkly. Rpt., Aug. 22). OHIO - Large percentage of peaches in a Muskingum County orchard showing entrance holes and containing larvae. (Knotts, Blair).

EYE-SPOTTED BUD MOTH (Spilonota ocellana) - WISCONSIN - Moth populations range moderate to heavy in Door County. (Wis. Coop. Sur.).

A LEAF ROLLER (Pandemus lamprosana) - DELAWARE - Reported in CEIR 10(21):403 as FRUIT TREE LEAF ROLLER (Archips argyrospila). Det. by J. F. G. Clarke as P. lamprosana. A probable new State record. (Burbutis, Mason).

APPLE APHID (Aphis pomi) - NEW JERSEY - Present on new apple shoots, but not heavy. (Ins.-Dis. Newsl., Aug. 23).

APPLE CURCULIO (Tachypterellus quadrigibbus) - NEW YORK - Extensive injury to apples of two varieties by summer feeding noted August 19 in orchard near Westport, Clinton County; 1 adult found actively feeding on fruit. (N. Y. Wkly. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - RHODE ISLAND - Total of 24 adults collected in bait trap during week in neglected orchard in Kingston. (Hansen, Aug. 24). NEW YORK - Adults ceased emerging in seeded cages August 13 in Monroe County; 1 grower reported adults caught in bait traps as late as August 17. Emergence ceased in Wayne County as of August 18. (N. Y. Wkly. Rpt.). WISCONSIN - Adults numerous enough in Bayfield County to be caught easily by hand; specimens trapped in Milwaukee and Dane Counties, and all stages now present in Door County. (Wis. Coop. Sur.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Heavily infesting apple leaves at Sandpoint, Bonner County. (Portman).

ORCHARD MITES - NEW JERSEY - Generally present on apples, but under control in all orchards checked. (Ins.-Dis. Newsl., Aug. 23). NEW YORK - Panonychus ulmi remains troublesome in some Monroe County orchards; Tetranychus telarius not yet building up to any great extent, with only 2 severe infestations found. T. telarius infestations present in Wayne County, but not common. (N. Y. Wkly. Rpt., Aug. 22). WEST VIRGINIA - P. ulmi populations increasing on apples and causing damage in eastern panhandle area. (W. Va. Ins. Sur., Aug. 22). COLORADO - T. telarius under control in orchards in Montrose, Mesa, Delta and Garfield Counties where spray schedules have been followed. (Colo. Ins. Sur.). CALIFORNIA - T. pacificus heavy on prune trees in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

DRIED-FRUIT BEETLE (Carpophilus dimidiatus) - CALIFORNIA - Heavy populations infesting peach fruits in Willows, Glenn County. (Cal. Coop. Rpt.).

PEACH SILVER MITE (Aculus cornutus) - COLORADO - Range of 30-50 mites per leaf silvers peach foliage in Paonia area, Delta County. (Colo. Ins. Sur.). CALIFORNIA - Medium infestation on peach in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Continues to damage pecans throughout Creek County and in localized areas of Seminole County. (Okla. Coop. Sur.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Adults appearing in considerable numbers in pecan groves throughout Jefferson and Stephens Counties. (Okla. Coop. Sur.).

GRAPE BERRY MOTH (Paralobesia viteana) - OKLAHOMA - Larvae causing extensive damage to foliage on some domestic grapevines in Marshall County. (Okla. Coop. Sur.).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - CALIFORNIA - Heavy infestation on grape roots in Pleasanton, Alameda County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - COLORADO - Populations continue to increase on untreated potatoes; 356 per 10 leaves in untreated field and 57 per 10 leaves in treated field in Weld County. (Colo. Ins. Sur.). MICHIGAN - Rapidly building up on peppers at Monroe and Sodus. (Hutson, Aug. 24). MARYLAND - Generally light on peppers in Worcester County. (U. Md., Ent. Dept.).

POTATO APHID (Macrosiphum euphorbiae) - COLORADO - Ranged 75-100 per 100 sweeps of potatoes in Montrose County. (Colo. Ins. Sur.).



APHIDS - NEW YORK - Slight buildup of unspecified species on potatoes in Madison County. (N. Y. Wkly. Rpt., Aug. 22). NEW JERSEY - Unspecified species reported heavy on broccoli. (Ins-Dis. News1., Aug. 23).

Potato Aphids in Maine - There was a sharp drop in numbers of BUCKTHORN APHID (Aphis nasturtii), POTATO APHID (Macrosiphum euphorbiae), GREEN PEACH APHID (Myzus persicae) and FOXGLOVE APHID (M. solani) in the Presque Isle area. Over-all aphid abundance now low in untreated potato plantings and generally low in commercially-treated fields. M. euphorbiae and A. nasturtii predominate on untreated potatoes. M. persicae is most abundant in some commercial fields. Fall migration of M. euphorbiae began August 21, the usual time. (Shands).

LEAFHOPPERS - COLORADO - Light trap collections of Macrosteles fascifrons dropped 50-75 percent during past week; sweeping collections in fields of potatoes show similar reduction in numbers. (Colo. Ins. Sur.). SOUTH DAKOTA - Empoasca fabae populations remain high in potatoes in eastern part of State. (Mast).

FLEA BEETLES - UTAH - Unspecified species damaged some potatoes in several Piute County localities. (Knowlton). COLORADO - Populations of Epitrix tuberis light on potatoes in Montrose County; 75-100 per 100 sweeps. None found in Weld County. (Colo. Ins. Sur.).

THRIPS - IDAHO - Spotted populations of unspecified species on margins of few fields of potatoes near Idaho Falls, Bonneville County; numbers ranged moderate to abundant. (Kohl).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy populations infesting peppers in Newman, Fresno County. (Cal. Coop. Rpt.).

POTATO TUBERWORM (Gnorimoschema operculella) - CALIFORNIA - Medium on tomatoes in Santa Maria area of Santa Barbara County. (Cal. Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MICHIGAN - Second brood laying eggs in quantity on pepper leaves at Monroe and Sodus. (Hutson, Aug. 24)

HORNWORMS (Protoperce spp.) - DELAWARE - Larvae common locally on tomatoes in New Castle County and on some untreated fields of peppers in Sussex County. (Burbutis, Mason). MARYLAND - Eggs and larvae light to moderate on peppers in Worcester County. (U. Md., Ent. Dept.).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Light populations in tomato fruit and stems in Chula Vista, San Diego County. (Cal. Coop. Rpt.).

VINEGAR FLIES (Drosophila spp.) - MICHIGAN - Populations on tomatoes building up in Niles, Benton Harbor and South Haven areas. (Hutson, Aug. 24). MARYLAND - Populations at highest peak of season in several fields of tomatoes in Worcester County. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - RHODE ISLAND - Relatively absent in gardens during this season. (Kerr, Hansen; Aug. 24). DELAWARE - Larvae common locally on snap beans in Sussex County, causing moderate feeding injury. (Burbutis, Mason). MARYLAND - Severe on moderate sized planting of lima beans at Sandy Spring, Montgomery County. (U. Md., Ent. Dept.). ALABAMA - Remains prevalent in Dallas County. (Granberry). WYOMING - Larvae averaged 3 per 100 plants in bean fields sampled. Beans 50 percent cut in Platte County and only few fields cut in Goshen and Laramie Counties. (Fullerton). UTAH - Causing severe damage to bean foliage throughout Salt Lake County, especially in home gardens. (Knowlton).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults common in lima beans in Kent County. (Burbutis, Mason).

A WHITEFLY - DELAWARE - Adults and nymphs, probably Trialeurodes sp., abundant locally on snap beans in New Castle and Sussex Counties; causing considerable yellowing of leaves. (Burbutis, Mason).

IMPORTED CABBAGEWORM (Pieris rapae) - MICHIGAN - Heavy deposition of eggs on cabbage at South Haven. (Hutson, Aug. 24). NEW YORK - Extremely heavy in untreated fields of crucifers in Niagara County. (N. Y. Wkly. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Heavy egg deposition on cauliflower at South Haven. (Hutson, Aug. 24). NEW JERSEY - Heavy on broccoli. (Ins.-Dis. Newsl., Aug. 23). NEW MEXICO - Eggs and young larvae becoming very abundant on seedling lettuce in Mesilla Valley. (N. M. Coop. Rpt.). NEW YORK - Beginning to appear in numbers on crucifers in Niagara County. (N. Y. Wkly. Rpt.).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Appearing in large numbers in collards in Marengo, Marengo County. (Granberry).

SQUASH BUG (Anasa tristis) - NEW YORK - Serious on squash and pumpkins in Orange County, week of August 22. Currently very abundant in many fields of squash in Niagara County. (N. Y. Wkly. Rpt.)

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Large adult numbers in sweetpotato fields. Ranged 64-112 and averaged 86 per 50 sweeps in 1 Evangeline Parish field; counts per 25 sweeps ranged 17-60 and averaged 35 in St. Landry Parish and ranged 8-17, averaging 12, in Acadia Parish. (Spink).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Few larvae remain on leaves of sugar beets. Adults numerous in fields of sugar beets and alfalfa in Goshen and Laramie Counties. (Fullerton). IDAHO - Larvae, probably this species, moving from Russianthistle into fields of potatoes in Jefferson County. (Gooch).

CUTWORMS - COLORADO - Peridroma saucia damaging foliage of sugar beets in Otero and Pueblo Counties. (Colo. Ins. Sur.). NEW YORK - Unspecified species damaging lettuce and celery in Orange County. (N. Y. Wkly. Rpt., Aug. 22).

A FLEAHOPPER (Spanogonicus albofasciatus) - NEVADA - Averaged 5-15 per cantaloupe in Pahrupm Valley, Nye County. (Bechtel, Parker, Zoller).

OBLIQUE-BANDED LEAF ROLLER (Archips rosaceana) - OREGON - Light populations observed on hops in Corvallis area, Benton County. (Morrison).

A LEAF ROLLER (Choristoneura parallela) - DELAWARE - Reported as a pest of strawberries in Newark, August 16. Det. by J. F. G. Clarke. A probable new State record. (Burbutis, Mason).

GRASSHOPPERS - UTAH - Unspecified species damaging raspberries and home gardens in many parts of Salt Lake County. (Knowlton).

#### TOBACCO INSECTS

HORNWORMS (Protoparce spp.) - MARYLAND - Several heavy second-brood infestations on tobacco reported from St. Marys County. (U. Md., Ent. Dept.). OHIO - Treatments applied in Warren County to control infestation. (Blair). WISCONSIN - In southern tobacco acreage, numbers of larvae (probably P. quinquemaculata) appear to be greater than in 1959; but populations very low in most fields examined. Considerable feeding noted in 1 Columbia County field, however, where larvae in all instars were quite numerous. P. sexta is quite rare in State, but 1 adult was taken in blacklight detector during past week. (Wis. Coop. Sur.).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - MARYLAND - Abundant and injuring late tobacco in all tobacco-growing counties. (U. Md., Ent. Dept.).

### COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Migration evident in nearly all counties. Some growers report all unprotected fruit now punctured. (Cott. Lett., Aug. 23). ALABAMA - Infestations increasing most areas of State, especially in northern area where squares still available. Migration evident throughout southern and central areas and in isolated areas in north. (Grimes). TENNESSEE - Migration continues to noninfested areas in western part of State. Rank cotton supports heaviest populations and control becoming more difficult in these fields. Many run-away infestations found where controls not adequate or properly applied. Adults very numerous in blooms. Average percent punctured squares in southern counties 43 compared with 36 previous week. Infestations continue to increase. Most damage confined to late fields. Very little damage from migrating weevils expected north of second tier of counties. Migration expected to move into northern counties by mid-September. (Locke). MISSISSIPPI - High infestations locally in delta area. Square counts ranged 10-100 percent. Young cotton will require protection well into September. (Merkl et al.). LOUISIANA - Percent square infestation by parishes was as follows: East Carroll - 12; Caldwell - 18; Richland - 15; Morehouse - 20; Ouachita - 18 and 9; Franklin - 18; Tensas - 16. Medium infestations in St. Landry Parish and infestations extremely light for time of year in Caddo Parish. (Spink). At Tallulah, Madison Parish, square infestation averaged 30 percent, with infestations building up rapidly. (Smith et al.). ARKANSAS - Fourth-generation weevil emergence well underway. (Ark. Ins. Rpt.). MISSOURI - Of 816 fields scouted, 217 found infested, with percent punctured squares 0-40. (Munson, Thomas, Wood). OKLAHOMA - Populations common throughout cotton-producing areas of State. Counts averaged 40 percent in localized area of Muskogee County; 3-7 percent in Payne County; 2-70 percent in south central area; and 0-38 percent in southwest area. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp., et al.) - SOUTH CAROLINA - Increasing in all Piedmont counties; larvae entering mature bolls in unprotected fields. (Cott. Lett., Aug. 23). ALABAMA - Causing considerable damage to cotton in most of northern area; limited number of large bolls infested in Dale County. (Grimes). TENNESSEE - Continue to cause considerable damage in boll weevil-infested area and becoming problem in other areas. (Locke). MISSISSIPPI - Moth activity remains high in delta area. Egg deposition and young larval infestations seem quite spotted. (Merkl et al.). LOUISIANA - Average percent infestation by parishes was as follows: Caldwell - 8; Ouachita - 7; Richland - 8; Morehouse - 8; Franklin - 6; Tensas - 3. Medium to heavy infestations reported in St. Landry Parish and infestation heavy, with eggs being deposited on all parts of plants, in Caddo Parish. (Spink). At Tallulah, Madison Parish, square infestation averaged 5 percent. Eggs averaged 7.67 and larvae 3.21 per 100 terminals. Controls apparently required until September 2. (Smith et al.). ARKANSAS - Heavy moth flight underway; egg and larval counts much higher and more general over State. Threat to cotton increased. (Ark. Ins. Rpt.). MISSOURI - Of 816 fields/scouted, 662 found infested with 0-14 eggs and 0-34 larvae per 100 terminals. (Munson, Thomas, Wood). OKLAHOMA - Populations continued to increase in Grady County; infestations averaged 40 percent. Counts in south central and southwest continued to average about 22 percent. Damaging infestations reported throughout remainder of cotton-producing areas of State. (Okla. Coop. Sur.). NEW MEXICO - Spotty, moderate to heavy infestations in Chaves and Eddy County cotton. (N. M. Coop. Rpt.). ARIZONA - Counts increased throughout central and southeast areas, averaging 1-3 larvae per 100 plants. Many larvae in later instars. Egg counts remain very low. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - TENNESSEE - Infestations declined over western area; some controls applied. (Locke). MISSISSIPPI - Considerable "ragging" of leaves in isolated areas of delta; controls required. Peak moth flights observed at light traps. (Merkl et al.). LOUISIANA - Heavy infestations in scattered areas in East Carroll Parish; controls being applied. Medium infestation reported in Evangeline Parish. Infestation spotty, but "ragging" leaves, in some fields in Caddo Parish. (Spink). OKLAHOMA - Infesting cotton locally in Bryan, Love, Grady and Blaine Counties. Maximum counts noted in Grady County were 3 larvae per 100 plants. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate infestations damaging cotton foliage in Chaves and Eddy Counties. (N. M. Coop. Rpt.). ARIZONA - Infestations heavy in some fields in all areas; generally being held down by a larval disease. Egg counts high in all areas. (Ariz. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - NEVADA - Light trap surveys negative in Nye County. (Parker, Zoller; Aug. 19).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - May become of concern on cotton in some areas of State. A few larvae found feeding on large bolls in Dale County. (Grimes).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Infestations increasing throughout Maricopa, Pinal and Pima Counties. New hatches of larvae very noticeable and egg mass counts high. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ARIZONA - Light larval infestations appearing in some Maricopa County cotton fields. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - NEW MEXICO - Occasional, light infestation found on cotton in Chaves County; mostly along river. (N. M. Coop. Rpt.). OKLAHOMA - An occasional third to fourth-instar larva noted in cotton in Chickasha area. First report of season. (Okla. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Infestations continue to increase throughout central and southwestern areas. Migration not yet noted; late-instar larvae much more abundant in the field than during previous week. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Heavy infestations continue a problem in cotton in some areas of Yuma and Pinal Counties. In other areas, populations generally light and restricted to edges of fields. (Ariz. Coop. Sur.).

OMNIVOROUS LEAF ROLLER (Platynota stultana) - CALIFORNIA - Occurring on cotton in McFarland area, Kern County. (Cal. Coop. Rpt.).

COTTON FLEAHOPPER (Psallus seriatus) - OKLAHOMA - Infestations continued to cause concern in Canadian and Jackson Counties. (Okla. Coop. Sur.).

APHIDS - SOUTH CAROLINA - Present in all counties, but serious only in Lancaster area. (Cott. Lett., Aug. 23). TENNESSEE - Continue a problem in many fields in western area where boll weevil controls applied. Aphid controls recommended. (Locke). NEW MEXICO - Aphis gossypii infestations light and widespread in cotton in Chaves County. (N. M. Coop. Rpt.).

CONSPERSE STINK BUG (Euschistus conspersus) - CALIFORNIA - Heavy on cotton in Westhaven, Fresno County. (T. Leigh).

LYGUS BUGS (Lygus spp.) - ARIZONA - High populations continue to damage cotton in many untreated fields in all areas. Average percent punctured squares 40-50 in central and southwestern areas. (Ariz. Coop. Sur.).

SPIDER MITES - TENNESSEE - Still causing serious damage to cotton in western area. Rains helped suppress infestations. Some spots caused complete defoliation and boll drop. (Locke). MISSOURI - Some infestation found in 103 fields of 816 scouted. (Munson, Thomas, Wood).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - NEW YORK - Ips pini heavy in pine plantation in Jefferson County. (Northeast. For. Pest Rpt., Aug. 19). ALABAMA - Ips sp. increased in Cherokee and De Kalb Counties. (Wade). LOUISIANA - Scattered infestations of Ips sp. in Virginia pine in Livingston Parish. (Spink). MICHIGAN - Ips sp. more numerous than in years over southern part of State. (Hutson). WISCONSIN - As of August 24, 4,648 cases of Dutch Elm disease diagnosed during 1960. The peak of second-brood emergence of native elm bark beetle passed and the second emergence of the smaller European elm bark beetle dwindling. (Wis. Coop. Sur.). CALIFORNIA - Pseudopityophthorus pubipennis heavy in live oak in Loomis, Placer County. Phloeosinus cristatus heavy in cypress in Concord, Contra Costa County. (Cal. Coop. Rpt.).

WHITE-PINE WEEVIL (Pissodes strobi) - Populations continue at high levels throughout the northeast. Heavier in MASSACHUSETTS than in past several years. In VERMONT, becoming an important pest of Colorado blue spruce in Christmas tree plantings and nurseries. (Northeast. For. Pest Rpt., Aug. 19).

ALDER FLEA BEETLE (Altica ambiens) - NEVADA - Heavy larval infestation causing defoliation of alder in Genoa, Douglas County. (Parker, Aug. 19).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - OHIO - Found in Scioto County August 24 and in Washington County August 25. Large numbers around and entering homes and annoying residents in Scioto County. (Blair). First report from the State. DELAWARE - Heavy on oaks throughout State. (Northeast. For. Pest Rpt., Aug. 19).

PINE ROOT COLLAR WEEVIL (Hylobius radicis) - NEW YORK - Continues to kill Scotch pine in plantations around Poughkeepsie and in several areas of Essex and Clinton Counties and near Lyonsdale. (Northeast. For. Pest Rpt., Aug. 19).

A SCARABAEID (Phyllophaga micans) - NORTH CAROLINA - Defoliating oaks locally in Wake County, April 27. Det. by O. L. Cartwright. (Farrier).

TWIG PRUNER (Elaphidion villosum) - More common than usual in VERMONT, MASSACHUSETTS and CONNECTICUT. (Northeast. For. Pest Rpt., Aug. 19).

GYPSY MOTH (Porthetria dispar) - In VERMONT, moderate defoliation in small patches between Burlington and Fair Haven. Around Lake Dunmore, in same State, defoliation generally equivalent to previous high in 1951. Infestations spotty throughout MASSACHUSETTS. NEW YORK reports noticeable defoliation and some stripping in Schenectady, Albany and Rensselaer Counties. Parasites present in untreated areas near Raybrook, New York. (Northeast. For. Pest Rpt., Aug. 19). WEST VIRGINIA - Trapping results negative. (W. Va. Ins. Sur.).

SPRUCE BUDWORM (Christoneura fumiferana) - MAINE - In addition to the 217,000 acres of balsam fir forest treated in northern part of State in June, 10,000 acres were found defoliated outside treated area. Of this latter area, 5,000 acres heavily defoliated and remaining 5,000 light to medium. Incompleted egg mass survey shows heavy deposition in part of this area as well as in a small number of scattered locations, all outside and eastward, of treated area. (Northeast. For. Pest Rpt., Aug. 19). (Also see CEIR 10(29):666).

FALL WEBWORM (Hyphantria cunea) - WEST VIRGINIA - Light on various hardwoods in Pocahontas County. (W. Va. Ins. Sur.). OREGON - Larvae moving to yards and houses. This has been most serious infestation of webworms in Willamette Valley for several years. (Capizzi).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - ALABAMA - Activity increased in Cherokee and De Kalb Counties. (Wade). Very heavy on Scotch pine in New Castle County, DELAWARE, as well as around Wareham, MASSACHUSETTS. (Northeast. For. Pest Rpt., Aug. 19).

LARGE ASPEN TORTRIX (Archips conflictana) - NEW YORK - Still very active in eastern Clinton and Essex Counties. (Northeast. For. Pest Rpt., Aug. 19).

AN OAK SKELETONIZER (Bucculatrix sp.) - MICHIGAN - Noticeable on oak at Lansing, Jackson, Grand Rapids, Kalamazoo, Augusta and Allegan. (Hutson).

PINE TUBE MOTH (Argyrotaenia pinatubana) - DELAWARE - Heavy on white pine. (Northeast. For. Pest Rpt., Aug. 19).

A PINE SAWFLY (Neodiprion pini-rigidae) - NEW JERSEY - More prevalent south of Trenton where it is now commonly found on pitch pines. (Northeast. For. Pest Rpt., Aug. 19).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - RHODE ISLAND - Infesting pine in Cranston area, August 19. (Mathewson). NEW YORK - Fed on red pine in northern area and in Dutchess County. First larva noted this season near Lowville, July 5. DELAWARE - Fed on red pine in New Castle County. (Northeast. For. Pest Rpt., Aug. 19).

YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) - NEW YORK - Damaging ornamental white spruce in several areas of State. (Northeast. For. Pest Rpt., Aug. 19).

BALSAM WOOLLY APHID (Chermes piceae) - VERMONT - New mortality quite spectacular in spots. Mild winter of 1959-60 may have favored buildup. (Northeast. For. Pest Rpt., Aug. 19).

PINE LEAF APHID (Pineus pinifoliae) - VERMONT - Heavier than expected in north central and eastern areas, while in south central portion, where former infestations have been heaviest, population decreased from 1959. (Northeast. For. Pest Rpt., Aug. 19).

WALKINGSTICKS - WISCONSIN - Heavy infestation on August 11 in a 100-acre Marinette scrub oak stand. (Wis. Coop. Sur.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEW YORK - Much injury to maples in Madison County. (N. Y. Wkly. Rpt., Aug. 22). OKLAHOMA - Damage more evident on elms in northwestern area. Localized moderate to heavy damage in Major, Woodward, Woods, Alfalfa and Garfield Counties. Other counties reporting damage were Osage, Roger Mills, Kingfisher, Okfuskee and Pontotoc. (Okla. Coop. Sur.). OREGON - Abundant; injury to elm foliage in Willamette Valley appears moderate. (Capizzi).

ELM CALLIGRAPH (Calligrapha scalaris) - OKLAHOMA - Damaging foliage of elms throughout Blaine County. (Okla. Coop. Sur.).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - SOUTH DAKOTA - Found in elm tree specimens from Madison, Lake County. (Mast).

POPLAR AND WILLOW BORER (Sternocetus lapathi) - OREGON - Larvae extensively damaged ornamental willow in Corvallis area. (Dickason).

APHIDS - NEW YORK - High populations of undetermined species feeding on willows in Nassau County. (N. Y. Wkly. Rpt., Aug. 22). OKLAHOMA - Light infestations of

Myzocallis ulmifolii on American elms throughout northwestern area. Populations of several aphid species increasing in numbers on a wide variety of ornamental plants in central area. (Okla. Coop. Sur.).

HACKBERRY LACE BUG (Corythucha celtidis) - INDIANA - Extremely numerous on hackberry trees in Tippecanoe, Fayette and Madison Counties. (Matthew).

MIMOSA WEBWORM (Homadaula albizziae) - WEST VIRGINIA - Moderate to severe on mimosa in Kanawha County. (W. Va. Ins. Sur.).

RED-HUMPED CATERPILLAR (Schizura concinna) - DELAWARE - Larvae very common on dogwood in Newark area of New Castle County. (Bray).

WHITE-MARKED TUSsock MOTH (Hemerocampa leucostigma) - DELAWARE - Larvae common on sycamore in an area of New Castle County. (Burbutis, Mason).

A SWEETGUM LEAF MINER (Phyllocnistis liquidambarisella) - DELAWARE - Collected August 17 in Cedar Swamp. Larvae mining sweetgum leaves. Adults emerged August 23. A probable first State record. (Burbutis, Mason).

A DOGWOOD SAWFLY (Macremphytus sp.) - WISCONSIN - Defoliated dogwood in an Iowa County hardwood stand. Additional heavy infestations reported in Iowa and Dane County hardwood stands. (Wis. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeriformis) - ALABAMA - Heavy infestations on Pfitzer juniper in Clay County. Several plants presumably killed by attacks of this pest. (Barwood). OKLAHOMA - Continued to damage evergreens in Kingfisher and Cotton Counties. (Okla. Coop. Sur.).

BAGWORMS - WEST VIRGINIA - Severe infestation on junipers in Cabell, Harrison, Mineral and Wetzel Counties. (W. Va. Ins. Sur.).

COCCIDS - CALIFORNIA - Heavy infestations of Pseudococcus gahani on Pittosporum crassifolium in Oakland, Alameda County. Aspidiotus juglans-regiae heavy on ash trees in Santa Paula, Ventura County. Coccus elongatus heavy on carob in San Diego, San Diego County. (Cal. Coop. Rpt.). MARYLAND - Unaspis euonymi heavy on euonymus at Camp Springs, Montgomery County, and Diaspis caruelli severe on arborvitae at Frostburg, Allegany County. (U. Md., Ent. Dept.). WISCONSIN - Five acres of jack pine 60 percent infested by Toumeyella numismaticum in Oconto County, August 14-20. (Wis. Coop. Sur.).

COTTONWOOD BORER (Plectrodera scalator) - OKLAHOMA - Extensive damage to young cottonwood trees in Roger Mills County. (Okla. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Heavy on a wide variety of ornamentals in Roger Mills County. (Okla. Coop. Sur.).

TREE CRICKETS - ALABAMA - Still causing severe damage to camellias in Mobile County. (Seibels).

AZALEA LACE BUG (Stephanitis pyrioides) - MARYLAND - Very heavy on azaleas locally in College Park area, Prince Georges County. (U. Md., Ent. Dept.).

A WHITEFLY - WEST VIRGINIA - Numerous on azalea in Cabell County. (W. Va. Ins. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - MARYLAND - Averaged 15-25 per animal at Sandy Spring, Montgomery County. (U. Md., Ent. Dept.). MICHIGAN - Populations at Gladwin, Jackson, Monroe and Flint became noticeable August 10, but not as widely reported as last year. (Hutson). INDIANA - Economic populations very annoying to cattle in many areas throughout northern half of State. Counts range 4-60 per infested animal in Tippecanoe, Cass, Miami, Wabash and Clinton Counties. Horses in area also infested. (Matthew). ILLINOIS - New county records found during survey completed August 27 were Schuyler, Brown, Scott, Jersey, Macoupin, Madison, St. Clair, Clinton, Piatt, Fayette, Effingham, Marion, Clay, Richland and Lawrence. Counts varied 0-44 per animal in the area. (Ill. Ins. Rpt.). WISCONSIN - A Walworth County report indicates a horse herd seriously attacked by face flies. (Wis. Coop. Sur.). MISSOURI - In north central area, counts on dairy cattle averaged 9.8 per animal, and averaged 20 per animal on beef cattle. All flies around face of cattle were probably not all M. autumnalis. (Benson). NEBRASKA - Light populations in Lancaster County. (Bergman).

MOSQUITOES - NEVADA - Heavy populations of Aedes dorsalis and A. nigromaculis in Sparks and southeast Reno, Washoe County. (Bechtel, Lauderdale; Aug. 19). NEBRASKA - Undetermined species annoying to city residents in central and eastern areas. (Bergman). LOUISIANA - Large populations, mostly Aedes sollicitans, in many areas of State. (Spink). WISCONSIN - Increased mosquito populations in many sections. A. vexans predominates in Madison area. Increase in number of dairy herds being affected by mosquitoes, especially in southeastern area. Mosquitoes worse than reported in last 4 years in Waukesha County. (Wis. Coop. Sur.). DELAWARE - Collections from 4 red artificial resting boxes contained large numbers of Anopheles quadrimaculatus and 5 specimens of Culiseta melanura from 3 localities. (Burbulis, Mason).

HORN FLY (Siphona irritans) - OKLAHOMA - Populations down slightly in Payne County area, with counts per animal ranging up to 1,000 on bulls and 200-500 on mature cows. Populations varied greatly on herds of range cattle in northwest area. Maximum counts per animal in the area averaged 3,000 on bulls, 1,500 on cows and 150 on young calves. Counts on most herds in area lower. (Okla. Coop. Sur.). UTAH - Conspicuously numerous on untreated beef herds in Sanpete and east Millard Counties. (Knowlton). LOUISIANA - Medium to heavy infestations in St. John the Baptist Parish. (Spink).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Populations up in Payne County area. Counts averaged 15-18 per animal on dairy cattle. (Okla. Coop. Sur.). NEBRASKA - Populations moderate to severe in feed lots of eastern area; apparently increasing due to favorable weather. (Bergman).

HOUSE FLY (Musca domestica) - OKLAHOMA - Remained the same in Payne County area. (Okla. Coop. Sur.). NEBRASKA - Populations increasing in all of eastern area. (Bergman).

FLIES - UTAH - Blow flies, house flies and other flies abundant about mink farms and slaughter houses in several parts of Salt Lake County. (Knowlton, Parrish).

TABANIDS - OKLAHOMA - Annoying populations of several species in Love, Okfuskee, Haskell, Sequoyah and McCurtain Counties. (Okla. Coop. Sur.).

BLACK WIDOW SPIDER (Latrodectus mactans) - UTAH - Few found about Salt Lake County homes. (Knowlton).

CHIGGERS - LOUISIANA - Very annoying to people in wooded areas of Livingston Parish. (Spink).



FLEAS (Ctenocephalides spp.) - RHODE ISLAND - Many complaints from all areas regarding flea infestations in homes and yards. (Mathewson, Hansen).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Infestations on cattle causing concern in Choctaw, McCurtain and Sequoyah Counties. (Okla. Coop. Sur.).

#### STORED-PRODUCT INSECTS

FLAT GRAIN BEETLE (Cryptolestes pusillus) - TEXAS - This species and unidentified bran bugs and moths medium to heavy in stored milo in San Patricio and Cameron Counties. (Texas Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - UTAH - This and a grain weevil heavily infesting stored grain at Newton, Cache County. (Knowlton).

Stored-grain Insects in New Mexico - Adults and larvae of INDIAN-MEAL MOTH (Plodia interpunctella) very abundant in feed stores and feed warehouses in southern counties, and large numbers of adults of Trogoderma spp. (not T. granarium) being found in stored grain in same area of State. Larvae and adults of RED FLOUR BEETLE (Tribolium castaneum) abundant in stored grain throughout the State. (N. M. Coop. Rpt.).

#### BENEFICIAL INSECTS

LADY BEETLES - OREGON - Several species extremely abundant in some Malheur County alfalfa fields, completely absent in others. Condition is unusual, since all fields checked received similar control applications. (Foster). WYOMING - Hippodamia sp. averaged 6 adults and 4 larvae per 25 sweeps in alfalfa sampled in Goshen and Laramie Counties. (Fullerton). COLORADO - Hippodamia sp. populations unchanged in treated potatoes, while populations in untreated fields increased fourfold during past week in Mesa County. (Colo. Ins. Sur.). NEBRASKA - Unspecified species averaged 6 adults per 10 sweeps of alfalfa in southeast area. (Bergman). OKLAHOMA - Hippodamia convergens light (up to 1 per sweep) in alfalfa throughout northwest area; light to medium in peanut fields in south central area; and occasional to light in cotton in south central and southwest areas. (Okla. Coop. Sur.). SOUTH CAROLINA - Scymnus puncticolis collected in Aiken County for a new State record. Det. by E. A. Chapin. (Nettles et al.).

A GORSE WEEVIL (Apion ulicis) - OREGON - Has been released at 4 locations in Drain-Scottsburg area of Douglas County to aid in control of gorse probably introduced from coastal areas. (Capizzi).

NABIDS (Nabis spp.) - COLORADO - Populations of N. ferus in Weld County have doubled in past week. (Colo. Ins. Sur.). WYOMING - Averaged 4 adults per 25 sweeps in alfalfa sampled in Goshen and Laramie Counties. (Fullerton). NEBRASKA - Averaged 4-10 per 10 sweeps in alfalfa. (Bergman). OKLAHOMA - Limited numbers (up to 0.3 per sweep) in alfalfa surveyed in northwest area. (Okla. Coop. Sur.).

LACEWINGS (Chrysopa spp.) - COLORADO - C. coloradensis numbers have remained at same level for past 3 weeks. (Colo. Ins. Sur.). NEBRASKA - Larvae in low numbers in alfalfa; most counts, 2 per 10 sweeps. (Bergman). OKLAHOMA - Adults and larvae common (up to 0.7 per sweep) in alfalfa surveyed in northwest. (Okla. Coop. Sur.).

FLOWER BUGS (Orius spp.) - NEBRASKA - Adults ranged 20-50 per 10 sweeps of alfalfa in southeast area; frequently observed in corn in northeast district. (Bergman).

HONEY BEE (Apis mellifera) - WISCONSIN - Most colonies used for pollination in orchards, cranberry bogs and cucumber fields now being returned to more favorable winter locations; few still remain for buckwheat and red clover fields. Honey crop varies, with best yields on light soils. Nosema disease and a paralysis disease have seriously affected bees in some areas. Controls applied over clover

fields and apiaries during bee flight activity caused serious losses to owners in certain areas. (Wis. Coop. Sur.):

ALKALI BEE (Nomia melanderi) - OREGON - Activity has ceased in Malheur and Umatilla Counties. (Stephen). UTAH - Becoming scarce in eastern Millard County alfalfa seed fields. (Knowlton).

A MEGACHILID BEE (Megachile rotundata) - UTAH - Abundant and pollinating alfalfa seed crop on ranch near Flowell, Millard County. (Bohart, Knowlton).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - NEW YORK - Adults very active in Oneida, Madison County. (N. Y. Wkly. Rpt., Aug. 22). WEST VIRGINIA - Light to moderate on various hosts in northern half of State. (W. Va. Ins. Sur., Aug. 22). OHIO - Infestations more serious in Muskingum County than in previous years. (Knotts).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - NORTH DAKOTA - Invading homes in most sections of the State. (N. D. Ins. Sur.).

FIELD CRICKETS - NORTH DAKOTA - In areas of high populations, numerous home infestations of unspecified species continue to be reported. (N. D. Ins. Sur.). NEBRASKA - Acheta sp. continues a nuisance around homes and businesses in eastern part of State. (Bergman).

EARWIGS - UTAH - Forficula auricularia entering large numbers of homes and damaging flower gardens in Salt Lake County; troublesome in many other central and northern area communities. (Knowlton). ALABAMA - Infestations of undetermined species increasing in and around homes in Dallas County. (Granberry).

CICADA KILLER (Sphecius speciosus) - MICHIGAN - More numerous than in years at Detroit, Sodus, Monroe and Kalamazoo. (Hutson, Aug. 24).

A SCOLIID (Scolia dubia) - MARYLAND - Wasps abundant around lawns at many localities in Anne Arundel, Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.).

A GRASS SNAIL (Vallonia pulchella) - CALIFORNIA - Heavy population in lawns in Hollister, San Benito County. (Cal. Coop. Rpt., Aug. 19).

#### CORRECTIONS

CEIR 9 (Index):17 - Aphis mellifera (honey bee) should read Apis mellifera.

CEIR 10(21):403 - FRUIT TREE LEAF ROLLER (Archips argyrospila) - DELAWARE - Delete note. Should read: A LEAF ROLLER (Pandemus lamprosana).

CEIR 10(32):738 - NOCTUIDS - CALIFORNIA - "...as high as 1 per sweep on cabbage.", should read on lima beans.

CEIR 10(34):783 - ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Reported in error as week of August 6; should read: "...in trap collection week of July 24-29; identified August 9."

CEIR 10(35):806 - Potato Aphids in Maine - BUCKTHORN APHID (Aphis nasturii) should read BUCKTHORN APHID (Aphis nasturtii).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Anticar. gemmat.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<b>ALABAMA</b>								
Auburn 8/26	12	8		8	1	3	219	3
<b>ARKANSAS</b>								
Hope 8/18-24	83							87
*Morrilton 8/18-24	39							116
Kelso 8/18-24	12							25
Fayetteville 8/18-24	5							236
<b>CALIFORNIA</b>								
Davis 8/17-22	317				46		62	
<b>DELAWARE</b>								
Bridgeville 8/19-25					234			
<b>FLORIDA</b>								
Quincy 8/22					9	3	126	
Monticello 8/23					4		64	
Gainesville 8/19					4		77	
<b>ILLINOIS</b>								
Urbana 8/19-25	146	29		22		170	95	
<b>INDIANA (Counties)</b>								
Lawrence 8/16-19, 22-23	143			20	81	62	29	
Tippecanoe 8/18-24	24			13	9	5	27	
Vanderburgh 8/17-23	129			17	40	3	129	
<b>LOUISIANA</b>								
Tallulah 8/20-26	102			26			153	17
Baton Rouge 8/19-25	48	1,335	1	161			166	
Franklin 8/22	3	96		37	5		15	
<b>MARYLAND</b>								
Fairland 8/17-23	12	8			36	17	37	
<b>MISSISSIPPI</b>								
*Stoneville 8/19-25	639	143		115	71		869	37
<b>MISSOURI</b>								
Columbia 8/20-26	256	73					116	
<b>NEBRASKA</b>								
Kearney 8/8-19	103	7		5	10	1	298	18
Lincoln 8/12-25	306					20	109	
North Platte 8/10-23	152	3			12	1	37	9
Scotts Bluff 8/4-10	9							
<b>NEW JERSEY (Counties)</b>								
Burlington 8/22	79						114	
Cape May 8/19							17	

\* Two traps - Morrilton, Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Anticar. gemmat.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<u>SOUTH CAROLINA</u>								
Clemson 8/13-19	95	105		155	22	7	335	6
Charleston 8/22-28	12	226		63	63	4	1,132	39
<u>TENNESSEE (County)</u>								
Blount 8/16-22	5			28	3	25	19	
<u>TEXAS</u>								
Brownsville 8/12-18		140			2		70	
Waco 8/20-26	205			196			1,915	10
<u>WISCONSIN</u>								
*Janesville 8/16-22	164						2	
Middleton 8/16-22	18				1			
Waterloo 8/16-22	41						2	
*Arlington 8/16-22	390	11				4	1	
Columbus 8/16-22	29						3	
*Theresa 8/16-22	53					2		
Oakfield 8/16-22	10					2		
Fairwater 8/16-22	164					2	1	
Rosendale 8/16-22	113						1	
Ripon 8/16-22	19					1		
La Crosse 8/16-22	36						12	

Additional Collections

CALIFORNIA - (Davis - 8/17-22); Prodenia praefica - 2,582; Spodoptera exigua - 2,699. TEXAS - (Brownsville - 8/12-18); Pectinophora gossypiella - 59,100.

\* Two traps - Janesville, Arlington; 3 traps - Theresa.

\*\*\*\*\*

ADDITIONAL NOTES

NEVADA - Spotted, medium to heavy infestations of CORN LEAF APHID (Rhopalosiphum maidis) on field corn in Fish Lake Valley, Esmeralda County, and at Las Vegas, Clark County. (Bechtel, Parker).

MISSISSIPPI - Extremely heavy infestations of FALL ARMYWORM (Laphygma frugiperda) have appeared in pastures, lawns and hay crops in Washington, Sunflower, Leflore and Humphreys Counties. Controls should be applied immediately if some pastures are to be saved. Many larvae are in last stages and could possibly give rise to another generation. (Merkl et al.).

OHIO - Sphecius speciosus and several species of WASPS and HORNETS annoying homeowners in most parts of the State. (Blair).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS  
AND RELATED ARTHROPODS - 1959

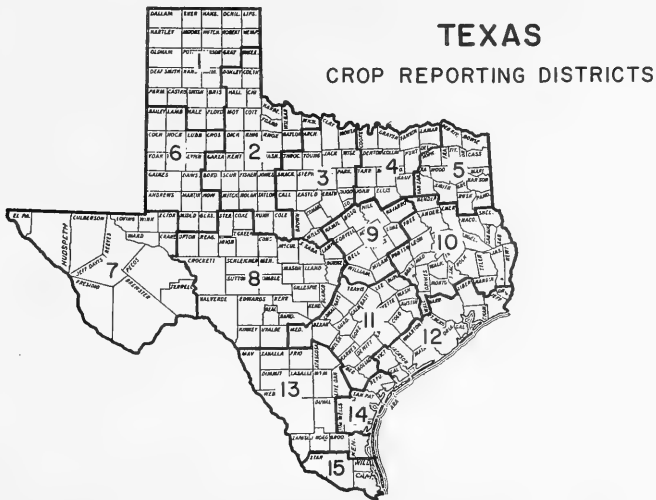
Introduction: Since 1951 the cooperating states have been urged to furnish information on losses caused by insects; however, no overall tabulation of losses has been published in the Cooperative Economic Insect Report prior to the partial tabulation of insect losses which follows on the next few pages in this report. The losses presented in this issue and several succeeding issues are a compilation of the 1959 loss figures submitted by 17 cooperating states. In this issue of the report, only losses to grain sorghum will be presented. In succeeding issues, losses to several other crops will be presented; one or more crops in each issue.

History: The problem of insect losses has been discussed in many quarters, including the Entomological Society of America's Committee on Insect Survey and Losses, and at the Society's branch meetings. In 1959, the Society combined its insect loss committee with the insect survey committee. Some years ago, the National Research Council of the National Academy of Sciences established a committee on agricultural pests. Among its active subcommittees is one responsible for developing ways and means for assembling information on insect losses. These two committees are now in general agreement on a method of procedure for obtaining loss data and have approved the form used this year, "Losses and Production Costs Attributable to Insects and Related Arthropods," and "the instructions for its use." (See page 842).

The acceptance of a standard procedure for computing insect losses will permit the nationwide compilation of loss information and provide for the orderly accumulation of dependable cost and loss figures attributable to insects. Rather than attempt to cover too many agricultural crops, each state was asked to prepare the 1959 data for only a few principal crops. It is hoped that the crops reported upon will be increased in the future.

Special Instructions For Use Of Loss Table

1. Under the "Pest or Pest Complex" column (E) abbreviations of pests are used. A Key to these pests can be found at the end of the table on that particular crop.
2. The numerical figures in columns B, C, F, G, N and P have been reduced to thousands, which are indicated by the figure "M".
3. The loss estimates for Texas were submitted on a district basis in 1959. As an aid to the reader, a map, showing the Crop Reporting Districts in Texas, is reproduced below.



INSTRUCTIONS FOR PREPARING  
LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS  
AND RELATED ARTHROPODS

- A. GEOGRAPHICAL UNIT - COUNTY AREA, STATE (Should conform to Crop Rep. Service)
- B. FROM CROP OR M ACRES PLANTED
- C. LIVESTOCK MKT. M ACRES HARVESTED
- D. SERVICE AV. YIELD Bushels, Tons, Bales or Pounds of livestock weight gain/acre
- E. PEST OR PEST COMPLEX
- F. M ACRES NEEDING CONTROL PRACTICE (i.e., sufficiently infested to make control profitable)
- G. M ACRES TREATED
- H. YIELD IN APPROPRIATE TREATED
- I. UNITS PER ACRE UNTREATED
- J. ESTIMATED % REDUCTION YIELD/ACRE FROM POTENTIAL (Estimated from differences H and I)
- K. COST OF PESTICIDE \$/A
- L. CONTROL APPLICATION \$/A
- M. PRACTICE TOTAL COST \$/A (Column K & L)
- N. COST TO TREAT ALL ACRES TREATED M\$
- O. ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A
- P. YIELD LOSS M\$ PLUS CONTROL COST M\$ (Calculated by use of: Av. price per unit)  
\$ X (Acres F - G) X (YIELD DIFFERENCE H - I) +  
M\$ N = EST. LOSS + COST ATTRIBUTABLE TO PEST  
IN AREA COVERED.

M = 1,000

The principles used:

1. Small geographical areas considered individually.
2. Data on each crop compiled separately.
3. Pest or Pest Complex considered where controllable by same operation.
4. Data on larger areas obtained by adding data from smaller areas.

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS  
 ATTACKING GRAIN SORGHUM IN 1959 IN  
 TEXAS, KANSAS AND NEBRASKA

A GEOGRA- PHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES PLANTED	D AV YIELD BU.	E PEST OR PEST COMPLEX (see legend)	F ACRES NEEDING CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I TREATED	J % REDUCTION YIELD/A FROM POTENTIAL	K COST OF CONTROL PRACTICE PEST- ICIDE \$/A	L APP- LICA- TION \$/A	M TOTAL \$/A	N TOTAL TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREAT- MENT \$/A	P YIELD LOSS \$ PLUS CONTROL COST \$	
	M ACRES HAR- VESTED	M ACRES NEEDING CONTROL PRACTICE						TREATED	UNTREATED									
TEXAS																		
1N	1,956.0	1,949.0	50.4		Sw, Ce	389.80	292.35	52.0	49.0		5	1.00	1.00	2.00	585.70	5.79	1,149.9	
1S	2,063.0	2,055.0	30.0		Ce, Sw	411.00	308.25	31.0	28.0		9	1.00	1.00	2.00	616.50	5.79	1,152.45	
2N	398.0	395.0	22.5		Sw, Sm, Ce	59.25	39.50	23.0	20.0		13	1.00	1.00	2.00	79.00	5.79	193.55	
2S	487.0	485.0	20.8		Sw, Sm, Ce	58.44	48.70	21.5	19.5		9	.75	1.00	1.75	85.22	3.86	123.21	
3	77.2	75.0	24.0		Sw, Sm, Ce	11.58	9.84	25.0	23.0		4	.75	1.00	1.75	17.72	3.86	24.50	
4	707.0	700.0	30.4		Sw, Sm, Ce	140.00	105.00	32.0	28.0		8	1.00	1.00	2.00	21.06	7.72	311.34	
7	181.2	180.0	30.0		Sw, Sm, Ce	27.08	21.66	31.0	29.0		6	1.00	1.00	2.00	43.33	3.86	64.44	
8N	571.0	570.0	32.7		Sw, Sm, Ce, Su	102.69	85.58	34.0	31.0		8	1.00	1.00	2.00	171.15	5.79	270.56	
8S	461.0	460.0	40.0		Sw, Sm, Ce, Su	82.89	73.68	43.0	39.0		9	1.00	1.00	2.00	147.36	7.72	218.28	
9	271.0	270.0	34.0		Sw, Sm, Ce, Su	40.58	27.50	36.0	33.0		8	1.00	1.00	2.00	55.00	5.79	130.83	
10N	237.0	236.0	33.0		Sw, Sm, Ce, Su	35.47	23.65	35.0	32.0		8	1.00	1.00	2.00	47.00	5.79	115.6	
10S	236.0	235.0	41.0		Sw, Sm, Ce, Su	35.32	23.55	43.0	39.0		9	1.00	1.00	2.00	47.00	7.72	137.77	

Table continued on page 844

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<u>KANSAS</u>															
NW	281.1	273.0	24.0	seedtreat	281.1	77.30	27.3	22.7	16.9	---	---	.054	4.17	3.44	716.7
WC	519.5	502.0	28.1	seedtreat	519.5	161.00	30.1	27.0	10.3	---	---	.054	8.69	2.30	853.3
SW	1,023.0	999.0	32.7	seedtreat	1,023.0	36.90	34.0	31.9	6.2	---	---	.054	1.99	1.54	1,575.8
NC	503.9	491.0	28.7	seedtreat Ch	503.9 30.2	181.40 15.00	34.8 32.0	25.2 25.4	27.6 21.1	---	2.33	.072 3.33	13.06 49.95	7.22 1.69	2,366.0 126.2
C	431.6	424.0	30.9	seedtreat Ch	431.6 43.2	129.50 40.00	34.6 31.4	29.3 24.8	15.4 21.0	---	2.33	.072 3.33	9.32 131.20	3.95 1.69	1,266.5 149.3
SC	660.0	647.0	34.0	seedtreat Ch Sw	660.0 13.2 3.3	198.00 4.71 3.00	36.3 37.3 55.3	33.0 32.2 34.0	9.1 14.0 36.0	---	2.33	.072 3.33 1.00	14.26 13.68 1.00	2.43 1.55 12.09	1,172.9 48.6 48.4
NE	256.2	254.4	42.9	seedtreat Ch	256.2 12.8	102.50 2.00	49.8 48.4	38.3 41.8	23.1 14.0	---	2.33	.09 3.33	9.22 6.66	8.65 1.69	1,353.5 60.8
EC	302.9	299.8	42.0	seedtreat Ch Sw	302.9 30.3 3.0	106.00 3.00 .20	46.9 47.9 65.7	39.4 41.3 40.2	16.0 14.0 39.0	---	2.33	.09 3.33 2.58	9.54 9.99 1.52	5.61 1.69 16.80	1,131.9 146.9 54.8
SE	269.0	263.8	42.1	seedtreat Ch Sw	269.0 13.5 13.5	92.80 35 .72	45.1 48.2 66.3	40.5 41.9 40.8	10.2 13.0 38	---	2.33	.09 3.33 2.58	8.35 1.16 1.86	3.41 1.46 16.80	624.4 64.1 249.5
Total	4,247.2	4,154.0	33.0		4,410.2	1,151.38							297.64		12,008.6
<u>NEBRASKA</u>															
	1,400.	1,306.	45.5	Ce, CI, Ch, G	75	50	50	40	1.5	.50	1.25	1.75	87.50	8.20	804

LEGEND

- M = 1000
- Seedtreat = Seed treatment
- Ce = Corn earworm (*Heliothis zea*)
- G = Grasshoppers
- CI = Corn leaf aphid (*Rhopalosiphum maidis*)
- Sm = Sorghum midge (*Contarinia sorghicola*)
- Ch = Chinch bug (*Blissus leucopterus*)
- Sw = Sorghum webworm (*Celama sorghivella*)
- Su = Sugarcane borer (*Diatraea saccharalis*)

FOOTNOTES

- 1/ Crop Reporting Districts in Texas; see map on page 841.
- 2/ 100 percent acreage seed treated, some of which needed additional treatment for other insects during the season, giving a total acreage needing treatment equalling more than 100 percent.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

CRICKETS numerous in North Dakota, South Dakota and Wisconsin, with Acheta sp. damaging alfalfa in Day County, South Dakota. (p. 847). FALL ARMYWORM continues damaging in several states and adults appearing in light traps in Wisconsin. (pp. 847, 848). SPIDER MITES heavy on corn in areas of Nevada and Utah. (p. 849). HESSIAN FLY summer survey reported in Kansas. (p. 849). SPOTTED ALFALFA APHID heavy on 15,000-20,000 acres of alfalfa in Antelope Valley, California, and increasing locally in Colorado. ALFALFA CATERPILLAR severe on alfalfa in Imperial County, California. PEA APHID building up rapidly on alfalfa in Eddy and Chaves Counties, New Mexico, and increasing in New Castle County, Delaware. PLANT BUGS heavily infesting alfalfa in several states. (p. 850).

Second ORIENTAL FRUIT FLY (male) taken in California. (p. 852).

TOMATO FRUITWORM extremely heavy on maturing celery in San Luis Obispo County, California. EUROPEAN CORN BORER causing extensive injury to commercial pepper plantings in Scioto County, Ohio, and number of infested fields of peppers increasing in Worcester County, Maryland. (p. 853).

BOLL WEEVIL and BOLLWORMS remain damaging in several areas. (pp. 854, 855).

ENGELMANN SPRUCE BEETLE outbreak on 4,000 acres in northern New Mexico. FALL WEBWORM damaging a variety of trees in 5 states. (p. 857).

Several species of MOSQUITOES annoying and widespread in several areas. (p. 858).

CORRECTIONS. (p. 859).

INSECT DETECTION: A new United States record was a scale insect (Parlatoria pyri) collected in the District of Columbia. (p. 857). A fleahopper (Spanogonicus albofasciatus) was reported for the first time from Lincoln County, Nevada. (p. 851).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 862).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS. (p. 863).

Status of some IMPORTANT INSECTS in the United States. (p. 867).

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Reports in this issue are for week ending September 2, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

SEPTEMBER 1960

The Weather Bureau's 30-day outlook for September calls for temperatures to average above seasonal normals in the eastern two-thirds of the Nation, except for near normal in northern and southern border areas. Below-normal averages are predicted west of the Continental Divide and near normal elsewhere. Rainfall is expected to be generally subnormal east of the Mississippi River except for heavy showers in states bordering the Gulf of Mexico. Subnormal amounts are also indicated over the Southern Rocky Mountain States and the Far Southwest. Precipitation is expected to exceed normal in the Pacific Northwest, the Northern Plains, and the West Gulf States. In areas not specified, near normal amounts are in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 5

Much above-normal temperatures covered most of the Rocky Mountain region and the Great Plains, and extended eastward through the Mississippi and Ohio Valleys to the middle Atlantic coast. Temperatures were 9 to 15 degrees above normal in the Dakotas and upper Great Lakes region and 3 to 6 degrees above normal in the Rocky Mountain region. Below-normal temperatures were confined to extreme northwestern sections of the Far West, upper New York State and some areas of the Gulf coast. Near normal temperatures prevailed along the south Atlantic coast and in the Gulf coastal region. This was the hottest week of the summer in Ohio and Wisconsin and record September maximum temperatures were set at Rapid City, South Dakota and Broadus, Montana, on September 4. Boston's 93 degrees on the 29th was the highest of the season. Freezing temperatures have been reported in some sections of Idaho and Wyoming with Big Piney, Wyoming, reporting a minimum of 17 degrees.

Thundershowers brought moderate to locally heavy rainfall to the lower Mississippi Valley region, Texas Gulf coast, some sections of the South and Middle Atlantic States, upper Great Lakes region, and extreme northwestern Washington. Most of the far western sections, except the coastal and valley regions of California, received light thunder shower rainfall. Locally heavy rainfall and wind damage occurred in Iowa, Illinois, Minnesota, and north Michigan. A squall line at Virginia, Minnesota, brought 1.41 inches of rainfall and caused considerable wind damage to barns and powerlines. Most of the Great Plains region was without precipitation while the New England region had very light rainfall. Thunderstorms with hale and heavy rain in Connecticut on August 30 caused minor crop damage and considerable soil erosion.

Severe hurricane Donna moving through the Leeward Islands on Sunday and north of Puerto Rico on Monday and Tuesday, was centered a short distance north of Turks Island in the southeastern Bahamas on Wednesday morning. First fragmentary reports indicate severe damage in the Leeward Islands with a considerable number of casualties. While Puerto Rico missed the full fury of the hurricane in which winds ranged up to 140 miles per hour near the storm center, torrential rains and high tides caused extensive flooding and damage and scores of casualties. (Summary supplied by U. S. Weather Bureau.)

## CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OKLAHOMA - Several species continue to damage pastures in localized areas of Kingfisher County and throughout Murray County. (Okla. Coop. Sur.). NORTH DAKOTA - Adult survey showed threatening infestations in parts of Rolette, Towner and Walsh Counties. Flax boll clipping and severe leaf stripping of alfalfa observed in these areas. (Wilson). WISCONSIN - Partial completion of adult survey revealed incidence to be somewhat higher than anticipated. Sandy areas in central section revealed high counts, as expected; counties adjacent to Lake Michigan also heavily populated, primarily by *Melanoplus femur-rubrum* in second instar to adult. Injury has been minimal even in most heavily infested fields of alfalfa. High incidence of grasshoppers in these fields indicates injury will most likely become more apparent. As development is retarded this season, it appears a greater part of grasshopper egg laying will occur later than usual. Controls following last-cutting alfalfa may be warranted to offset some of next season's potential. (Wis. Coop. Sur.).

MORMON CRICKET (*Anabrus simplex*) - UTAH - Infestations have been found this season in 8 locations, involving Daggett, Iron, Piute, San Juan, Tooele and Uintah Counties. (Thornley, Davis).

FIELD CRICKETS - NORTH DAKOTA - Populations of black crickets remain high in many sections of the State. (N. D. Ins. Sur.). SOUTH DAKOTA - *Acheta* sp. very numerous in stubble and fields of alfalfa in eastern area (Mast) and damaging alfalfa seed pods in Day County area (Walstrom). WISCONSIN - Relatively high numbers of unspecified species observed in alfalfa in most sections of State. (Wis. Coop. Sur.).

CORN EARWORM (*Heliothis zea*) - NEW JERSEY - Light trap catches were highest of season in Cape May County week of August 26; catches also high in Burlington County. (Ins.-Dis. Newsl.). DELAWARE - Larvae present in 100 percent of ears in 1 field of corn in New Castle County; mostly first instar, but all instars present. Larvae present in soybeans locally in Sussex County. (Burbutis, Mason). GEORGIA - Light on grain sorghum in Butts, Coweta, Carroll, Polk, Floyd, Cherokee, Gwinnett, Barrow, Madison and Hart Counties. (Johnson). ALABAMA - Heavy in soybean fields in Talladega County; feeding on pods only; 1 field of about 10 acres completely destroyed, with 40-50 percent of beans in several other fields (40-50 acres in size) destroyed. (Grimes). MISSOURI - Heavy on late corn in southeast area. (Munson, Thomas, Wood). OKLAHOMA - Averaged 1.8 per head in 100-acre field of late-planted "open-head" grain sorghum in Craig County; much lower in earlier-planted 200-acre field. Counts 1-3 per head in late-planted sorghum in Payne County, but damage apparently very light in most fields. Damaging grain sorghum in Pawnee, Tulsa and Muskogee Counties. Larvae moderate to heavy (6-10 per plant) damaging seed pods of soybeans in Muskogee County. Larvae tunneled 10 percent of pods on field peas checked in Stigler-Keota area, Haskell County. Damaging peanuts in localized areas of Bryan County. (Okla. Coop. Sur.). NEBRASKA - Damage in ears as high as 60 percent in Nemaha County. (Bergman). NEVADA - General and moderate on corn in Clark and Lincoln Counties. Heavy infestation in Caliente, Lincoln County, averaged 3-6 larvae per ear. (Bechtel, Parker, Zoller).

FALL ARMYWORM (*Laphygma frugiperda*) - GEORGIA - Light to heavy on millet, grain sorghum, Coastal Bermuda grass and fescue in Butts, Coweta, Carroll, Polk, Floyd, Cherokee, Gwinnett and Barrow Counties; light on millet in Madison and Hart Counties. (Smith). ALABAMA - Present in varying numbers in almost every field of corn or grain sorghum checked in Chambers, Clay, Talladega and Bibb Counties; infestations medium to heavy in Chambers, Clay and Talladega Counties. As many as 3-5 larvae per stalk not uncommon in some fields. Pasture grasses completely destroyed in many areas of above-mentioned counties. Damage continues to pasture grasses, grain sorghum, corn and other crops in most areas. While infestations were generally heavy in most areas surveyed, only light damage and very few larvae were found in corn in Bibb County. (Grimes). LOUISIANA - Continues heavy on pasture grasses in all parts of State; however, some decline noted in Tensas

Parish. Of larvae collected on experimental farm in East Baton Rouge Parish, 81 percent were diseased or parasitized. (Spink). TEXAS - Moderate to heavy in pastures and lawns throughout south, north central and eastern portions of State. (Texas Coop. Rpt.). Continues to increase on alfalfa in Burleson County; also present as budworms on late grain sorghum. (Doering). OKLAHOMA - Causing some damage to grain sorghum foliage over most of State; considerable foliage damage in whorls of late-planted grain sorghum in Payne County. No damage noted in immature heads not yet emerged from boot stage. Damaging new pastures and lawns locally in Love County. (Okla. Coop. Sur.). WISCONSIN - Adults beginning to appear in blacklight detectors. (Wis. Coop. Sur.).

ARMYWORMS - SOUTH CAROLINA - Infestations of Pseudaletia unipuncta high in lawns and pastures in Charleston and other Coastal Plain counties; heavy in unfolding leaf whorls in silage sorghum in Allendale County. (Nettles et al.). WISCONSIN - High numbers of P. unipuncta taken in blacklight trap at La Crosse. (Wis. Coop. Sur.). DELAWARE - Prodenia ornithogalli larvae range from 1 per 5 sweeps to 1 per sweep in alfalfa in New Castle and Kent Counties. (Burbutis, Mason).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NORTH DAKOTA - Infestation of sweet corn has been severe this season. (N. D. Ins. Sur.). SOUTH DAKOTA - Adults numerous in southeastern part of State. (Mast). WISCONSIN - Egg hatching has increased and moth flight has been heavy. (Wis. Coop. Sur.) MISSOURI - Third-brood egg laying past peak in southeast area; larvae range first to fourth instar. (Munson, Thomas, Wood). ARKANSAS - Pupation appears practically completed in northeast; only 1 pupa found in several fields checked. (Ark. Ins. Rpt.). ALABAMA - Intensive distribution surveys made in Chambers, Clay, Talladega and Bibb Counties; found only in Talladega County. Surveys in other bordering counties will be made at later date. (Grimes). DELAWARE - Eggs still being deposited on corn throughout State. Blacklight trap at Bridgeville yielded 162 adults August 26-31. Late-instar larvae and pupae common in corn in Kent and Sussex Counties. (Burbutis, Mason).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Larvae boring below ground level in stalks of corn in northeast. Pupation appears to have ceased and larvae preparing to hibernate. (Ark. Ins. Rpt.).

SORGHUM WEBWORM (Celama sorghiella) - KANSAS - Damaging sorghum in Crawford, Elk and Greenwood Counties. (Gates). OKLAHOMA - Damaging grain sorghum in Tulsa and Okfuskee Counties. Averaged 11 per head in a 100-acre field of late-planted "open-head" type sorghum in Craig County; much lower in 200 acres of earlier-planted sorghum in same area; severe damage expected in late plantings in area. (Okla. Coop. Sur.). GEORGIA - Light to moderate on sorghum and millet heads in Butts, Gordon and Barrow Counties. (Johnson).

SAP BEETLES - UTAH - Unspecified species infesting 35 percent of late sweet corn in Cedar City area of Iron County. (Knowlton).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Infestation moderate on grain sorghum in Burleson County. (Doering).

SOD WEBWORMS (Crambus spp.) - OREGON - Adults extremely abundant in lawns and attracted to lights in several Willamette Valley locations. (Capizzi).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Extremely low in late-planted grain sorghum checked in Payne County. (Okla. Coop. Sur.). NEBRASKA - Very light in all fields of milo observed. (Bergman). WYOMING - Adults found in 4 fields of corn in Wheatland area, Platte County. Because of lack of moisture, many fields of corn being cut for silage. (Fullerton). NEVADA - Infestations light to medium and spotted on corn, sorghum and Bermuda grass in Clark and Lincoln Counties. (Bechtel, Parker, Zoller).





VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - SOUTH CAROLINA - Only few specimens encountered in Allendale County. Few moths present at night. (Nettles et al.). ALABAMA - Limited number of larvae observed on soybeans in Talladega County. (Grimes).

CABBAGE LOOPER (*Trichoplusia ni*) - OKLAHOMA - Causing heavy damage to soybean foliage in some fields in Sequoyah County. Damaging peanuts in localized areas of Caddo County. (Okla. Coop. Sur.). DELAWARE - Larvae in alfalfa locally in New Castle County. (Burbutis, Mason).

BEET WEBWORM (*Loxostege sticticalis*) - NEW MEXICO - Occasional light to heavy infestations in alfalfa and sorghum in Eddy and Chaves Counties. (N. M. Coop. Rpt.).

RED-NECKED PEANUTWORM (*Stegasta basqueella*) - OKLAHOMA - Heavy adult flights noted in Payne County. (Okla. Coop. Sur.).

VARIEGATED CUTWORM (*Peridroma saucia*) - SOUTH CAROLINA - Damaging peanuts at Edisto Experiment Station in Barnwell County. (Nettles et al.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - CALIFORNIA - Heavy in 15,000-20,000 acres of alfalfa in Antelope Valley, Los Angeles County. (D. May). Large planting of Lohanton alfalfa in Natoma area, Sacramento County, showing moderate to high honey dew; sooty mold occurring on lower leaves. (W. Golden). NEVADA - Counts per sweep averaged 5-15 in Moapa Valley and 0-7 in Virgin Valley, Clark County; and 0-5 in Pahrangat Valley, Lincoln County. Counts per stem averaged 10-15 in Caliente and 7-10 in Panaca, Lincoln County. (Bechtel, Parker, Zoller). UTAH - Very light in Iron County alfalfa. (Knowlton). COLORADO - Population increased rapidly on alfalfa in Prowers County, averaging 2,000 per 100 sweeps; averaged 1,000 per 100 sweeps in Bent, Otero and Crowley Counties and 20 per 100 sweeps in Pueblo County. (Colo. Ins. Sur.). NEW MEXICO - Light to heavy on alfalfa in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

ALFALFA CATERPILLAR (*Colias philodice eurytheme*) - CALIFORNIA - Severe on alfalfa plantings in Imperial area, Imperial County. (V. Roth). ARIZONA - Continues to increase gradually in alfalfa statewide; heaviest populations in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Adults and larvae abundant in fields of alfalfa in Chaves and Eddy Counties. (N. M. Coop. Rpt.). WYOMING - Averaged 2 larvae per 25 sweeps in alfalfa sampled in Washakie, Johnson and Natrona Counties; very few adults noted. (Fullerton).

PEA APHID (*Macrosiphum pisi*) - IDAHO - Populations decreasing markedly, especially in southern area, due largely to activity of various predators. (Manis). NEVADA - None found in alfalfa in Moapa and Virgin Valleys, Clark County; averaged 1-2 per sweep in Pahrangat Valley, Caliente and Panaca, Lincoln County. (Bechtel, Parker, Zoller). NEW MEXICO - Building up rapidly on alfalfa in Eddy and Chaves Counties; many growers planning controls. (N. M. Coop. Rpt.). WYOMING - Averaged 20 per 100 sweeps in alfalfa in Fremont and Washakie Counties, and 15 per sweep in Johnson, Natrona and Converse Counties. (Fullerton). NEBRASKA - Averaged 20-40 per 10 sweeps in southeast and central areas. (Bergman). DELAWARE - Numbers increased in alfalfa in New Castle County; ranged 10-25 per sweep. (Burbutis, Mason).

PLANT BUGS - NEBRASKA - *Lygus lineolaris* ranged 5-30 per 10 sweeps and *Adelphocoris lineolatus* averaged 3-7 per 10 sweeps in southeast and central districts; *A. rapidus* averaged 5-10 per 10 sweeps in central and southern districts. (Bergman). COLORADO - *Lygus* spp. ranged 50-150 per 100 sweeps of alfalfa in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). WYOMING - Adults of *Lygus* spp. averaged 3 per 25 sweeps in fields of alfalfa sampled in Fremont County and 7 per sweep in Washakie County. (Fullerton). UTAH - *Lygus* spp. destroying buds of late-blooming alfalfa in some seed fields in Fillmore-Kanab and Delta-Sutherland areas of Millard County. (Knowlton). NEVADA - *Lygus* spp. ranged 30-50 adults or nymphs per sweep in heavily infested alfalfa in Moapa and Virgin Valleys, Clark County; and in Pahrangat Valley, Lincoln County. (Bechtel, Parker, Zoller).

OREGON - Adults and nymphs of Lygus spp. averaged 2 per sweep in Jackson County alfalfa. (Capizzi).

STINK BUGS - SOUTH CAROLINA - Several species appear to be more numerous on soybeans than during past 4 years in Allendale County. May cause downgrading of soybeans. (Nettles et al.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - NEVADA - Averaged 15-30 adults per sweep in Moapa and Virgin Valleys, Clark County. (Bechtel, Parker). UTAH - Abundant on alfalfa in some southwestern area orchards. (Knowlton). ARIZONA - Continues very high in alfalfa statewide, with considerable girdling damage in all areas. (Ariz. Coop. Sur.). TEXAS - Heavy on alfalfa in Brazos River area of Burleson County. (Doering).

LEAFHOPPERS - CALIFORNIA - Early infestations of Macrosteles fascifrons in Ladino clover for seed infected plants with aster yellows, which is now showing heavy vegetative proliferations from seed heads, reducing seed production an estimated 20 percent in Herald area, Sacramento County. (W. Golden). NEBRASKA - Empoasca fabae averaged 8-10 per 10 sweeps in southeast area. (Bergman). MARYLAND - E. fabae ranged 4-15 per sweep on alfalfa in Frederick and Howard Counties. (U. Md., Ent. Dept.).

A FLEAHOPPER (Spanogonicus albofasciatus) - NEVADA - Averaged 30-40 per sweep in several fields of alfalfa in Moapa and Virgin Valleys, Clark County; 1-3 per sweep in alfalfa in Pahrnagat Valley, Caliente and Panaca, Lincoln County. Latter are first records for Lincoln County. Occasional specimens found on corn in same localities. (Bechtel, Parker, Zoller).

BLISTER BEETLES (Epicauta spp.) - UTAH - Generally light to moderate in alfalfa seed fields this season. (Knowlton). NEBRASKA - Averaged 10-15 per 10 sweeps in southeastern area. (Bergman). SOUTH DAKOTA - Large numbers of E. pennsylvanica in fields of alfalfa in north central, central and south central areas. (Mast). WISCONSIN - E. pennsylvanica common in some fields of alfalfa throughout most of State; appears less abundant than in previous years. (Wis. Coop. Sur.). OHIO - Epicauta spp. feeding in alfalfa in Sandusky and Scioto Counties. (Holdsworth). DELAWARE - Adult numbers of E. pennsylvanica increased in alfalfa in New Castle County; averaged 6 per 10 sweeps. (Burbutis, Mason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Present in damaging numbers on soybeans locally in Allendale County; many newly emerged adults present and could cause trouble this season. (Nettles et al.).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Adults remain heavy on soybeans in St. Landry Parish. (Spink).

FULLER ROSE BEETLE (Pantomorus godmani) - ALABAMA - Heavy on peanuts and soybeans in Randolph County. (Barwood).

#### FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - UTAH - Infesting 80-100 percent of apples examined in Cedar City-Parowan area, Iron County. (Knowlton). WISCONSIN - Second-generation larvae nearly all emerged from apples in southern counties. (Wis. Coop. Sur.). OHIO - Emergence terminating earlier than usual in Lorain County; infestations in treated orchards light, although untreated trees show 100 percent infestation. (Cutright).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - CALIFORNIA - This and Anarsia lineatella medium in peach fruits in Visalia, Tulare County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - A second adult (male) taken in Steiner trap located in Holly bush in the City Park at Anaheim, Orange County. Det. by D. Byers. Trap placement continues, with heavy concentrations in county. Fruit sampling continues in each square mile by districts. (Cal. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Adult activity continues and controls are being recommended. (Flaskerd, Aug. 31). WISCONSIN - Adults remain present in Dane and Bayfield Counties. (Wis. Coop. Sur.). OHIO - Adult emergence diminishing in numbers, but adults still being trapped. (Cutright).

WOOLLY APPLE APHID (Eriosoma lanigerum) - IDAHO - Moderately heavy flights noted in Moscow, Latah County. (Manis, Gittins, Smith).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - WISCONSIN - Observed to have been so heavy on some untreated apples in Price County that fruit was covered with numerous scales. (Wis. Coop. Sur.).

A PSYLLID (Psylla trimaculata) - CALIFORNIA - Medium on Prunus emarginata in General Grant Grove Park, Fresno County. (Cal. Coop. Rpt.).

PEAR-SLUG (Caliroa cerasi) - IDAHO - Locally very abundant and causing considerable damage in Grangeville, Idaho County. (Studer).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - UTAH - Caused moderate damage to pears and apples in Nephi-Levan area of Juab County. (Knowlton).

ORCHARD MITES - UTAH - Unspecified species conspicuously discolored foliage in all apple orchards in Iron County. (Sjoblom, Knowlton). Tetranychus mcdaniell unusually abundant and damaging in northern and central orchards during past 2 weeks. (Davis, Knowlton). OHIO - Populations of Panonychus ulmi have been declining naturally on untreated trees from approximately 100 per leaf to 0.1 during past 3 weeks. (Cutright). NEW JERSEY - Overall situation appears to be well under control. Overwintering P. ulmi eggs appearing in some areas on apple. (Ins.-Dis. Newsl., Aug. 30).

OREGON WIREWORM (Melanotus oregonensis) - CALIFORNIA - Medium adult infestation in fig trees in Winters, Yolo County. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Damaging foliage of pecan trees in east central area. (Okla. Coop. Sur.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Adults present in most pecan areas of State. (Okla. Coop. Sur.).

BLACK-HEADED FIREWORM (Rhopobota naevana) - OREGON - Continues to damage cranberry plantings in Bandon area, Coos County. Adults and early instar larvae present in most bogs in late August, with large adult flights reported at 1 location. Several plantings exhibited fruit damage August 25, particularly at field edges where controls through sprinkling systems did not give complete coverage. (Capizzi).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEVADA - An additional 3 infested properties found in Twin Lakes area of Las Vegas, Clark County. Surveys indicate infestation is presently confined to this area. Adults now present. (Bechtel, Parker). ARIZONA - Egg counts very high on home grape plantings in Tucson area, Pima County. Moth flights heavy in area during past several days. (Ariz. Coop. Sur.).

A GRAPE LEAFHOPPER (Erythronerua sp.) - CALIFORNIA - Medium infestation, possibly E. elegantula, on grape plantings in Corona, Riverside County; and in Los Banos, Merced County. (Cal. Coop. Rpt.).

GRAPE SCALE (Aspidiotus uvae) - NORTH CAROLINA - Continues to infest grapes in McDowell County. Det. by H. Morrison. (Farrier).

A SCARABAEID - ARIZONA - Larvae of an unidentified species damaging grove of first-year citrus on Yuma Mesa, Yuma County. Larvae averaged 2-3 per tree and girdling just below soil surface is severe; many trees being killed. Field was in sorghum prior to citrus. (Ariz. Coop. Sur.).

#### TRUCK CROP INSECTS

Aphids on Potatoes - COLORADO - Myzus persicae populations reduced 80-90 percent in treated and untreated fields of potatoes. Leaf counts were 8.9 per 10 leaves in a treated field and 38 per 10 leaves in an untreated field in Weld County. (Colo. Ins. Sur.). WISCONSIN - M. persicae common on some potatoes in Kenosha area, while Macrosiphum euphorbiae is most common species in Rhinelander area. (Wis. Coop. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Nymphs common on potatoes in Racine-Kenosha area; adults remain scarce. (Wis. Coop. Sur.). DELAWARE - Adults and nymphs common on beans statewide, and common in 1 field of pumpkin squash in Sussex County. (Burbutis, Mason).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Population continues to decrease. Counts during past week, on potatoes, averaged 2 per 100 sweeps; 50 percent reduction in Weld County. (Colo. Ins. Sur.).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Adults averaged 2 per 25 sweeps in each field of potatoes sampled in Hot Springs and Washakie Counties. (Fullerton).

LYGUS BUGS (Lygus spp.) - UTAH - Range light to moderate on potatoes in the Beryl-Enterprise area of Iron and Washington Counties. (Knowlton).

FLEA BEETLES - WISCONSIN - Numbers of second-generation Epitrix cucumeris increased on potatoes in Racine-Kenosha area. (Wis. Coop. Sur.). TEXAS - Heavy infestations of an unidentified species damaged sweetpotatoes in Frio County. (Devers). NEVADA - E. hirtipennis light on potatoes in Panaca, Lincoln County. (Bechtel, Parker, Zoller).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Slight increase in number of eggs per 100 tomato leaves noted; 4 in Prowers County, 1 in Otero County and none in Bent County. (Colo. Ins. Sur.). CALIFORNIA - Extremely heavy on maturing celery in San Luis Obispo County. (Cal. Coop. Rpt.). DELAWARE - Adults numerous on lima beans throughout State; larvae present in 1 field in Kent County and 1 field in Sussex County. (Burbutis, Mason).

EUROPEAN CORN BORER (Pyrausta nubilalis) - OHIO - Causing extensive injury to peppers in commercial plantings in Scioto County; 100 percent of peppers were infested in 1 field at harvest. (Brooks). MARYLAND - Numbers of infested fields of peppers increasing in Worcester County; however, infestations are generally light. (U. Md., Ent. Dept.).

ARMYWORM (Pseudaletia unipuncta) - CALIFORNIA - This and unspecified loopers causing severe skeletonization of beans in Kern County. (Cal. Coop. Rpt.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae common on beans throughout State and causing moderate feeding injury. (Burbutis, Mason).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Damaging 20-acre commercial bean planting in Tulsa area. (Okla. Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Causing moderate injury to commercial late beans at Snow Hill, Worcester County. (U. Md., Ent. Dept.). TEXAS - Heavy on snap beans in Lubbock County; 12 larvae per plant, several egg clusters and an occasional adult. (Weigle).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Larvae averaged 4 per 10 sweeps in field of carrots and are common in field of lima beans in New Castle County; common on pumpkin squash and numerous on cabbage and cauliflower in Kent County. (Burbutis, Mason). LOUISIANA - Light on sweetpotatoes in St. Landry Parish. (Spink).

IMPORTED CABBAGEWORM (Pieris rapae) - WISCONSIN - Increased to highest peak of season on cabbage in Racine and Kenosha Counties, although controls have been effective. (Wis. Coop. Sur.). DELAWARE - Eggs common in field of cabbage and cauliflower in Kent County; larvae on horseradish. (Burbutis, Mason).

LOOPERS - NEW JERSEY - Unspecified species are heavy on fall broccoli, cabbage and cauliflower. (Ins.-Dis. Newsl., Aug. 30).

SALT-MARSH CATERPILLAR (Estigmene acrea) - LOUISIANA - Ranged 8-30 and averaged 18 per 50 sweeps on sweetpotatoes in Evangeline Parish. (Spink).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - LOUISIANA - Adults heavy on sweetpotatoes and peas in St. Landry Parish. Completely defoliated field of string beans in Opelousas. (Spink).

BEEF LEAFHOPPER (Circulifer tenellus) - UTAH - Moderately numerous on Russian-thistle and curly top still infesting some tomatoes in Sanpete and Sevier County gardens. (Knowlton). Curly-top disease in tomatoes averaged 15-20 percent in Washington County; 1 experimental field at Santa Clara showed 75-80 percent curly top. Fields of canning tomatoes in Salt Lake, Utah, Davis, Weber and Box Elder Counties showed a 5 percent loss from this beet leafhopper-borne disease. (Dorst). WYOMING - Adults averaged 3 per 25 sweeps in sugar beets in Washakie County; curly top present in many fields of beets in this area. (Fullerton).

MELONWORM (Diaphania hyalinata) - CALIFORNIA - Single adult taken in light trap at Winterhaven, Imperial County. This is first adult taken this year. (Cal. Coop. Rpt.).

RASPBERRY SAWFLY (Monophadnoides geniculatus) - WISCONSIN - Larvae common on raspberries in Dane County. (Wis. Coop. Sur.).

CYCLAMEN MITE (Steneotarsonemus pallidus) - OREGON - Building up in central Willamette Valley strawberry fields since mid-August. (Rosenstiel).

### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Most common reported pest of cotton. Infestations by counties were: Muskogee - 40 percent in localized areas; Wagoner - 28 percent; Hughes - severe; countywide in Sequoyah and Okfuskee; Canadian - light to moderately heavy; Bryan - very heavy; Beckham - up to 40-50 percent and increasing locally; countywide in Caddo, Grady, Garvin and Cotton. (Okla. Coop. Sur.). MISSOURI - Punctured squares and bolls ranged 0-40 percent in 186 fields of 761 scouted. (Munson, Thomas, Wood). LOUISIANA - Percent square infestation by parishes was as follows: Caldwell - 25; Ouachita - 30 and 14; Richland - 25 and 21; Morehouse - 50; Franklin - 20; Tensas - 18. Infestations were light in Bossier Parish and medium in St. Landry Parish. (Spink). Square infestation averaged 36 percent at Tallulah, Madison Parish, and infestations are building up rapidly. Many late fields on heavy soils are in peak production and will require controls until at least October 1. (Smith et al.). ARKANSAS - Activity increased; migration from cut-out cotton to succulent cotton common. (Ark. Ins. Rpt.). ALABAMA - Migrating in all areas. (Grimes). SOUTH CAROLINA - Nearly all

fields now have light infestations. (Cott. Lett., Aug. 30). GEORGIA - Heavy infestations throughout northwest, north and northeast. Square counts not made owing to scarcity of squares. (Johnson).

BOLLWORMS (Heliothis spp., et al.) - NEW MEXICO - Continue very serious problem on cotton in eastern counties. Have been in fields continuously since middle of June. Many growers had to treat every 7-10 days. (N. M. Coop. Rpt.). ARIZONA - Infestations light to medium in cotton statewide. Highest counts show 3-4 larvae per 100 plants. (Ariz. Coop. Sur.). OKLAHOMA - Infestation averaged 40 percent in untreated cotton fields in Chickasha area, Grady County. Light (2 percent) in fields in Wagoner County, severe in cotton in Hughes County, light in localized areas of Beckham County, countywide in Pawnee, Caddo, Grady and Garvin Counties. (Okla. Coop. Sur.). MISSOURI - The 639 fields checked were infested with 0-41 eggs and 0-29 larvae per 100 terminals. (Munson, Thomas, Wood). LOUISIANA - Average percent infestation by parishes was as follows: Caldwell - 6; Ouachita - 8 and 2; Richland - 5; Morehouse - 7; Franklin - 6; Tensas - 3. Infestations were medium in St. Landry and Bossier Parishes. (Spink). Square infestation averaged 2 percent at Tallulah, Madison Parish; averaged 21.13 eggs and 0.87 larva per 100 terminals. (Smith et al.). ARKANSAS - Moth emergence and egg deposition heavy; moths laying eggs on several parts of plant. Small larvae readily found under dried blooms feeding on bolls. (Ark. Ins. Rpt.). GEORGIA - Moderate to heavy infestations of small and mature bolls throughout northwest, north and northeast areas. (Johnson).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Continues to be a pest of economic importance in cotton fields of southeastern counties. Damage unusually heavy in many fields. (N. M. Coop. Rpt.). OKLAHOMA - Larvae commonly killed by disease in Chickasha area, Grady County. In localized areas of Bryan County. (Okla. Coop. Sur.). LOUISIANA - Light infestation in St. Landry Parish. (Spink). ARKANSAS - Continues to appear in fields. (Ark. Ins. Rpt.). ALABAMA - Active in few fields of cotton in central area. (Rawson). GEORGIA - Light to moderate infestations in northwest, north and northeast. (Johnson).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - First gin trash available from 2 gins in Bard Valley, Imperial County. Survey negative. (Cal. Coop. Rpt.).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Active in a few cotton fields in central area. (Rawson).

BEEET WEBWORM (Loxostege sticticalis) - CALIFORNIA - Light populations on cotton in Fresno area, Fresno County. (Cal. Coop. Rpt.).

BEEET ARMYWORM (Spodoptera exigua) - NEW MEXICO - Occasional spotty infestation in cotton in Eddy and Chaves Counties. (N. M. Coop. Rpt.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ALABAMA - Active in a few cotton fields in central area. (Rawson).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Very light populations continued in Chickasha area, Grady County, with little or no increase in numbers from last week. Localized infestations in Bryan County. (Okla. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Considerable damage in Yuma County cotton. Although controls very successful, the buildup was so rapid that many were not applied in time to avoid serious damage. Counts still high in the county and also in some areas of Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

PLANT BUGS - ARKANSAS - Increased. Feeding on small bolls, especially in fields in the northeast. (Ark. Ins. Rpt.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations continue high in untreated cotton fields statewide where cotton is still fruiting. Many fields in all areas have cut out. (Ariz. Coop. Sur.). NEVADA - Averaged 0-4 per 100 sweeps in Moapa Valley, Clark County. (Bechtel, Parker).

A LEAFHOPPER (Empoasca sp.) - NEVADA - Heavy and defoliating lower cotton leaves in some fields in Moapa Valley, Clark County. (Bechtel, Parker).

APHIDS - SOUTH CAROLINA - Infestation of undetermined species high in nearly all fields. (Cott. Lett., Aug. 30). GEORGIA - Aphis gossypii light in northwest, north and northeast. (Johnson).

PALE-STRIPED FLEA BEETLE (Systema blanda) - NEVADA - Damaged bracts, bolls and leaves in some fields in Moapa Valley, Clark County. (Bechtel, Parker).

SPIDER MITES - NEW MEXICO - Spotty infestations of Tetranychus sp. mostly along edges of cotton fields in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

MISSOURI - Undetermined species found in 47 fields. (Munson, Thomas, Wood).

SOUTH CAROLINA - Undetermined species high in nearly all fields. (Cott. Lett., Aug. 30).



FOREST, ORNAMENTAL AND SHADE TREE INSECTS

ENGELMANN SPRUCE BEETLE (Dendroctonus engelmanni) - NEW MEXICO - Outbreak found on about 4,000 acres on Rio Grande Grant in northern area. (N. M. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Damaging foliage of a variety of trees in east central area. (Okla. Coop. Sur.). KANSAS - Forming webs on American elms in Riley County. (Parker). SOUTH DAKOTA - Infesting various trees throughout State. (Hantsbarger). NEW JERSEY - Large tents very common on deciduous trees. (Ins.-Dis. Newsl.). MARYLAND - Infestations common on many deciduous trees in central sections. (U. Md., Ent. Dept.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - NEW MEXICO - Galls very abundant on Colorado blue spruce in Colfax, Lincoln and Santa Fe Counties. (N. M. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OREGON - Abundant. Seriously skeletonized many elms in Jackson County. Large numbers of adults and a few mature larvae found August 30. (Capizzi). OKLAHOMA - Damage to elm foliage continued to cause considerable concern over most of State. Larvae of a new generation hatching in central area. (Okla. Coop. Sur.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - SOUTH DAKOTA - In addition to Hylurgopinus rufipes reported from elms in Madison, Lake County (CEIR 10(36):834), both H. rufipes and S. multistriatus were reared during week of August 29-September 2. (Mast). WISCONSIN - Feeding heavily in Madison. (Wis. Coop. Sur.).

MIMOSA WEBWORM (Homadaula albizziae) - NEW JERSEY - Much more webbing of honeylocust in late season activity. (Ins.-Dis. Newsl.). MISSOURI - Medium to heavy on mimosa in southeast and south central areas; many trees have been defoliated. (Munson, Thomas, Wood). Severe on honeylocust in central area. (Stone). DELAWARE - Webbing very noticeable on mimosa throughout State. (Burbutis, Mason).

EUROPEAN ELM SCALE (Gossyparia spuria) - COLORADO - Population reduced by municipal control in Sterling, Logan County. (Colo. Ins. Sur.).

SPIDER MITES - WISCONSIN - Building up on elm and willow in Dane County. (Wis. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - SOUTH CAROLINA - At a warehouse near Greenville, 75 conifers infested. (Nettles et al.). MARYLAND - Heavy on spruce at Reisterstown, Baltimore County, and on willows at Salisbury, Wicomico County. (U. Md., Ent. Dept.). OKLAHOMA - Widespread damage to evergreens over State this season. Larvae beginning to feed on broad-leaved plants in several areas of State. (Okla. Coop. Sur.). TEXAS - Heavy infestations on locust and elms in Floyd County. Several hundred larvae per tree and some trees completely defoliated. (Hatchett).

APHIDS - OKLAHOMA - Infestations of several species more common on a variety of ornamental plants over State, following the new growth caused by recent rains and mild weather. (Okla. Coop. Sur.). DELAWARE - An undetermined species very common on willow in New Castle and Sussex Counties. (Burbutis, Mason). MARYLAND - Pineus strobi persisting on white pines locally in Baltimore. (U. Md., Ent. Dept.).

A SCALE INSECT (Parlatoria pyri) - DISTRICT OF COLUMBIA - Collected from privet by C. W. McComb on May 20. Det. by H. Morrison. This is the first United States record for this species. (Sailer).

GLADIOLUS THRIPS (Taeniothrips simplex) - WISCONSIN - Relatively heavy in some plantings of gladiolus in many sections of State. (Wis. Coop. Sur.).

GIANT HORNET (Vespa crabro germana) - DELAWARE - Girdling branches of ash and lilac in New Castle County. (Bray).

AZALEA LEAF MINER (Gracilaria azaleella) - DELAWARE - Common in azaleas in New Castle County. (Kelsey).

AZALEA LACE BUG (Stephanitis pyrioides) - MARYLAND - Heavy on azaleas at Bethesda, Montgomery County. (U. Md., Ent. Dept.).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - NEW MEXICO - Undetermined species extremely annoying around homes and gardens at Mosquero, Harding County. (N. M. Coop. Rpt.). OKLAHOMA - Wide-spread infestations of Psorophora spp. a nuisance throughout most of State. (Okla. Coop. Sur.). LOUISIANA - Owing to heavy rains, populations of several species of mosquitoes have increased considerably over wide areas of State and are extremely annoying to man and animals. (Spink). NEBRASKA - Populations severe in most eastern cities. Bites reported to have caused serious illness of one child in Lancaster County. (Roselle). WISCONSIN - Mosquitoes continue to be a problem in most areas. The species chiefly involved are Aedes vexans and Culex pipiens, although some Anopheles spp. being caught. (Wis. Coop. Sur.). DELAWARE - Collections from 4 red artificial resting boxes yielded 238 Anopheles quadrimaculatus, 2 A. punctipennis, 1 Culiseta melanura and several other species in low numbers. (Burbutis, Mason).

AN EYE GNAT (Hippelates collusor) - NEVADA - Heavy populations present in Moapa Valley, Clark County. (Bechtel, Parker).

HORN FLY (Siphona irritans) - OKLAHOMA - Counts per animal averaged 2,500-3,000 on bulls and 900-1,200 on mature cows in Payne and Noble Counties. Annoying cattle throughout Pawnee, Cotton and Murray Counties. Heavy infestations on cattle in Hughes County. Increasing in McCurtain County. (Okla. Coop. Sur.).

TABANIDS - OKLAHOMA - Counts per animal on mature cattle in favorable areas checked in Payne and Noble Counties averaged as follows: Tabanus abactor 1, T. atratus 0.2, T. sulcifrons 0.5-1 and Tabanus sp. 1-2. Moderate to heavy populations annoying to livestock throughout eastern half of State. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Populations annoying throughout Sequoyah County. (Okla. Coop. Sur.).

CAT FLEA (Ctenocephalides felis) - NEBRASKA - Severe populations in buildings in North Platte. (Pruess). WISCONSIN - Reported biting humans in some areas. (Wis. Coop. Sur.).

A CHIGGER (Trombicula belkini) - CALIFORNIA - Several complaints of people being bitten in Oakland, Alameda County. Samples taken were this species which does not normally occur in State as a pest. (B. Keh).

STRAW ITCH MITE (Pyemotes ventricosus) - NEBRASKA - Severe irritation suffered by men bagging bromegrass seed in Lincoln. (Roselle).

#### BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults of Hippodamia spp. averaged 7 and larvae 5, per sweep, in alfalfa sampled in Fremont, Hot Springs, Washakie, Johnson and Natrona Counties. (Fullerton). UTAH - Populations of unspecified species have noticeably decreased in central area alfalfa during past 2 weeks. (Knowlton).

MELYRIDS (Collops spp.) - WYOMING - Adults averaged 3 per 25 sweeps in alfalfa sampled in Fremont and Washakie Counties. (Fullerton).

FLOWER BUGS (Orius spp.) - NEBRASKA - Adults averaged 8-12 per 10 sweeps in central and southern districts. (Bergman).

NABIDS (Nabis spp.) - NEBRASKA - Averaged 20-30 per 10 sweeps in central and southeastern districts. (Bergman). WYOMING - Adults averaged 15 per 25 sweeps in alfalfa sampled in Fremont, Hot Springs, Washakie, Johnson and Natrona Counties. (Fullerton).

A BRACONID PARASITE (Opius ferrugineus) - OREGON - A total of 114 adults released on Prunus emarginata near Corvallis in an attempt to establish this parasite of Rhagoletis cingulata indifferens. (Every).

#### MISCELLANEOUS INSECTS

FALSE CHINCH BUG (Nysius ericae) - SOUTH DAKOTA - Many farms in Faulk County being invaded; also a problem inside homes. (Mast).

FIELD CRICKETS - SOUTH DAKOTA - Acheta sp. continues to be a problem in many homes in eastern portion of State. (Mast). NORTH DAKOTA - Invasions of homes by unspecified species continue to be reported in many sections of the State. (N. D. Ins. Sur.).

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla) - NEBRASKA - More specimens sent in for identification during past few weeks than normal. (Roselle).

ORIENTAL COCKROACH (Blatta orientalis) - SOUTH DAKOTA - Infesting homes in Hamlin County. (Hantsbarger).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - SOUTH DAKOTA - Becoming a pest in many homes in the State. (Hantsbarger).

#### CORRECTIONS

CEIR 10(36):821 - INSECT DETECTION - Scymnus puncticollis should read Scymnus puncticollis.

CEIR 10(36):844 - Date following table should read CEIR 10(36):9-2-60.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<b>ALABAMA</b>							
Auburn 8/31	6	2	3			53	
<b>ARKANSAS</b>							
Hope 8/25-31	211					190	
*Morrilton 8/25-31	63					545	
Kelso 8/25-31	18					50	
Fayetteville 8/25-31	5					236	
<b>CALIFORNIA</b>							
Davis 8/24-30	406					69	
<b>DELAWARE</b>							
Bridgeville 8/26-31				166			
<b>ILLINOIS (County)</b>							
Champaign 8/26-9/1			36	130		88	84
<b>INDIANA (Counties)</b>							
Lawrence 8/25,26,29,30	143		10	48	30	24	
Tiptecanoe 8/25-31	35		4	4	10	18	
Vanderburgh 8/24-30	206		21	47	1	211	
<b>KANSAS</b>							
Garden City 8/4-5, 6-9, 12, 15-19	72		4	4	13	36	
Hays 8/3,5,7,11,16,19, 24,27,29,31	132				7	12	
Manhattan 8/5-9/1	179		163		3	198	
Mound Valley 8/2,6,8, 10,16	67			15	12	32	
Wathena 8/14-23, 26-28	162		25	79	55	83	
<b>LOUISIANA</b>							
Tallulah 8/27-9/2	168		34			114	14
Franklin 8/26-9/1	14	123	65	2		7	
Baton Rouge 8/26-9/1	29	1,051	63			87	
<b>MISSISSIPPI</b>							
*Stoneville 8/26-9/1	410	92	107	35		469	67
<b>NEBRASKA</b>							
Lincoln 8/26-9/1	149				10	133	
Scotts Bluff 8/11-24	86				6	6	3
Cheyenne (County) 8/23-28	2						
<b>NEW JERSEY (County)</b>							
Burlington 8/25	28		17	3	8	32	
<b>SOUTH CAROLINA</b>							
Clemson 8/20-26	204	441	427	27	9	257	3
Charleston 8/29-9/4	3	95	35	141	2	290	18

\* Two traps - Morrilton, Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<b>TENNESSEE (County)</b>							
Blount 8/29	36		64	4	12	196	
<b>TEXAS</b>							
Brownsville 8/23-26		1,042		22		177	16
Waco 8/26-9/2	255		131			1,633	14
<b>WISCONSIN</b>							
Waterloo 8/23-29	51					2	
Waterford 8/23-29	7					3	
Middleton 8/23-29	72	23				2	
Arlington 8/23-29	475	12				7	
Columbus 8/23-29	92					3	
*Theresa 8/23-29	183					1	
Fairwater 8/23-29	123					6	
Fond du Lac 8/23-29	20					2	
Rosendale 8/23-29	95					5	
Ripon 8/23-29	23					1	
La Crosse 8/23-29	2,788					5	
Green Bay 8/23-29	42	5					
Antigo 8/23-29	64						

Additional Collections

CALIFORNIA - (Davis - 8/24-30); Prodenia praefica -945; Spodoptera exigua - 2,725.

\* Three traps - Theresa.

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported June 30 by the Plant Quarantine Division, ARS, USDA, are as follows:

KHAPRA BEETLE (Trogoderma granarium) 18 times; at Honolulu, Hawaii, one time in stores; at San Francisco, California, one time in stores; at San Pedro, California, one time in stores; at Houston, Texas, 3 times in stores, with burlap covers of baled rubber cargo, and with guar gum cargo; at Charleston, South Carolina, 2 times with guar gum cargo; at Philadelphia, Pennsylvania, one time in stores; at New York, New York, 8 times with cargoes of gum arabic and tumeric; and at Buffalo, New York, one time in stores.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 20 times; at Honolulu 16 times, in baggage 13 times and in mail 3 times destined for the mainland; at Miami, Florida, one time in baggage from Brazil; at New York, one time in baggage from Italy, and one time in cargo of coffee cherries from Costa Rica; and at Baltimore, Maryland, one time in stores.

An ALEYRODID (new genus and species) on cargo of Epidendrum fragrans from Nicaragua on February 25 at Miami.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) 5 times at Honolulu in mail and baggage destined for California.

A TERMITE (Coptotermes niger Snyder) in cargo of "banak" (Virola sp.) logs from Costa Rica on June 8 at New Orleans, Louisiana.

MEXICAN FRUIT FLY (Anastrepha ludens) 2 times in baggage from Mexico for California destinations; at El Paso, Texas, one time and at Nogales, Arizona, one time.

A WEEVIL (Heilipus sp.) in avocado in baggage from Panama at Miami on April 17.

A BARK BEETLE (Pityogenes chalcographus (L.)) in conifer dunnage from Belgium on April 25 at Miami.

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS  
ATTACKING SOYBEANS AND CLOVER SEED IN ILLINOIS IN 1959

A CROP	B FROM CROP OR LIVESTOCK REPORTING SERVICE		D YIELD TONS PER ACRE $\frac{1}{2}$	E PEST OR PEST COMPLEX (see legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		J % REDUCTION YIELD/A FROM POTENTIAL	K PEST- ICIDE \$/A	L APP- LICA- TION \$/A	M TOTAL PRACTICE \$/A	N TOTAL COST TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD $\frac{1}{2}$ LOSS M\$ PLUS CONTROL COST M\$
	M ACRES PLANTED	M ACRES HAR- VED - $\frac{1}{2}$ TED					TREATED	UNTREATED							
SOYBEANS	2/ 4,825	3/ 4,740	26.5	G	0.04	0	---	---	$\frac{4}{20}$	1.50	1.00	2.50	0	8.63	1
	"	"	"	B1b	232	6	---	---	$\frac{4}{10}$	"	"	"	13	3.07	1,409
	"	"	"	Gc	66	3	---	---	$\frac{4}{5}$	"	"	"	8	0.23	192
CLOVER SEED	-----	201	60.0	Mainly Blanc bugs	201	15	---	---	$\frac{5}{30}$	1.50	1.00	2.50	38	12.30	$\frac{6}{2,046}$
														TOTAL	1,602

LEGEND

G = Grasshoppers

B1b = Bean leaf beetle (Cerotoma trifurcata)

Gc = Green cloverworm (Plathypena scabra)

FOOTNOTES

1/ Based on figures published in Illinois Cooperative Crop Reporting Service---Crops---  
Illinois Annual Summary, December 22, 1959.

2/ Planted for all purposes.

3/ Harvested for beans.

4/ Estimated

5/ Based on past records in the State.

6/ Based on cost to the farmer, December 15, 1959, as published in Illinois Cooperative  
Crop Reporting Service--Prices--January 5, 1960.

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LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING ALFALFA AND CLOVER IN ILLINOIS AND MICHIGAN IN 1959

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C FROM CROP OR LIVESTOCK REPORTING SERVICE		D YIELD PER ACRE	E PEST OR PEST COMPLEX (see legend) P. 845	F ACRES NEEDING CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS. BEEF/A		I % REDUCTION YIELD/A FROM POTENTIAL	J PEST-ICIDE \$/A	K COST OF CONTROL PRACTICE	L APPLICATION \$/A	M TOTAL COST TREATED \$/A	N ESTIMATED GAIN OR (LOSS) TREATMENT \$/A	O YIELD LOSS PLUS CONTROL COST \$ <sup>2/</sup>
	M ACRES PLANTED	M ACRES HARVESTED	M ACRES HARVESTED	M ACRES HARVESTED					TREATED	UNTREATED							
ILLINOIS																	
			2,065	2.07	C1w	72	11				6.2 <sup>3/</sup>	2.25	1.00	3.25	36	1.16	211
			"	"	P1	61	9				"	"	"	"	29	"	175
			"	"	M8	59	9				"	"	"	"	29	"	173
			"	"	Gw	144	22				"	"	"	"	72	"	422
			"	"	Sw	123	19				"	"	"	"	62	"	361
																Total	1,342
MICHIGAN																	
			1,180	1.85	Pb, M8, G, C, A, L	600	20	2.1 Tons	1.6 Ton		12	1.00	3.00	4.00	80	6	200

FOOTNOTES

1/ Total acres of clover and alfalfa in Illinois based on figures published in Illinois Cooperative Crop Reporting Service--Crops--Illinois Annual Crop Summary, December 22, 1959.

2/ Illinois figures based on prices farmers paid Dec. 15, 1959, as published in Illinois Cooperative Crop Reporting Service--prices--January 5, 1960.

3/ Based on research figures for 1959 in Illinois.



LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING ALFAIFA IN 1959 IN  
NEBRASKA, NEW JERSEY AND MARYLAND

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES HARVESTED	D YIELD PER ACRE	E PEST OR PEST COMPLEX (see legend)	F ACRES NEEDING CONTROL PRACTICE	G M AGRICULTURAL PRACTICES		H YIELD IN BU., TONS, BALES OR LBS. OF BEEF/A	I TREATED	J % REDUCTION IN YIELD/A FROM POTENTIAL	K COST OF PESTICIDE \$/A	L COST OF CONTROL PRACTICE \$/A	M TOTAL \$/A	N TOTAL COST TREAT ALL/A TREATED \$/A	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$/A PLUS CONTROL COST \$/A
	M ACRES PLANTED	M ACRES TREATED															
NEBRASKA	1,900	1,846	2.25	Saa, Pa, G, Bb, Pi, Gw, Alw, Ac, C	125	74	3 ton	2 ton	2.0	1.20	1.05	2.25	167	12.00	858		
NEW JERSEY	125	120	2.5	Aw, Pa, Ms	120	106	2.7 T	1.6 T	40 (nearest 10%)	1.40	1.10	2.50	265	36 (nearest dollar)	741		
MARYLAND	---	118	2.30	Aw, Ms, Pa, Pl	118	100	2.42 Tons/acre	1.67 Tons/acre	5	3.10	1.03	4.13	413	30.00	953		

LEGEND:

- Clw = Clover leaf weevil (*Hypera punctata*)  
 Pl = Potato leafhopper (*Empoasca fabae*)  
 Ms = Meadow spittlebug (*Philaenus leucophthalmus*)  
 Gw = Garden webworm (*Loxostege sticticalis*)  
 Sw = Sweetclover weevil (*Sitona cylindricollis*)  
 Pb = Plant bugs
- G = Grasshoppers  
 C = Cutworms  
 A = Armyworms  
 L = Leafhoppers  
 Alw = Alfalfa webworm (*Loxostege commixtalis*)  
 Pa = Pea aphid (*Macrosiphum pisi*)
- Saa = Spotted alfalfa aphid (*Therioaphis maculata*)  
 Bb = Blister beetles  
 Ac = Alfalfa caterpillar (*Colias philodice eurytheme*)  
 Aw = Alfalfa weevil (*Hypera postica*)
- CEIR 10(37):9-9-60

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING FIELD BEANS IN NEBRASKA AND MICHIGAN IN 1959

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M		D FROM CROP OR LIVESTOCK REPORTING SERVICE	E PEST OR PEST COMPLEX (see legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		J % REDUCTION YIELD/A FROM POTENTIAL	K PEST-ICIDE \$/A	L COST OF CONTROL PRACTICE		M TOTAL TREAT ALL/A TREATED \$/A	N ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	O YIELD LOSS \$ PLUS CONTROL COST \$	
	M ACRES PLANTED	M ACRES HARVESTED	M ACRES	M AV YIELD TONS PER ACRE					TREATED	BEEF/A			UNTREATED	APPLICATION \$/A				TOTAL \$/A
NEBRASKA																		
NW	74	72	27.2 bu./a.	47	45	20 bu./a.	28.5 bu./a.	0.53	3.60	1.55	5.15	231.75	30.60	331				
MICHIGAN	536	450	12.5 cwt.	300	200	11.25 cwt.	13.75 cwt.	5	1.00	3.00	4.00	80.00	5.62	1,362				

LEGEND

Wbc = Western bean cutworm (*Loxagrotis albicosta*)

Mbb = Mexican bean beetle (*Epilachna varivestris*)

G = Grasshoppers

T = Thrips

Scm = Seed-corn maggot (*Hylemya cilicrura*)

L = Leafhoppers

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STATUS OF SOME IMPORTANT INSECTS IN THE UNITED STATES

APPLE FRUIT MOTH (Argyresthia conjugella Zell.)

Economic Importance: Larvae of this small hyponomeutid have been a serious pest in apple orchards of western Canada. The pest also occurs in northern Europe where it frequently destroys the entire apple crop. Larvae originally fed on the berries of European mountain ash (Sorbus aucuparia) in Europe and on the fruit of Oregon crabapple (Malus fusca) in Canada, but the species is now thoroughly established on cultivated apple. In England and Scandinavia it has been found infesting cherry and in Japan it was at one time one of the most important apple pests.

Distribution: Canada, Denmark, Finland, Germany, Great Britain, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, U.S.S.R., and the United States, including Alaska.

Hosts: Apple, cherry, plum, Vaccinium spp., serviceberry, crabapple, pear and mountain ash.

Life History and Habits: There is a single generation a year in Japan. The insect overwinters as a mature larva in a cocoon in the soil. Adults appear about the middle of July and are nocturnal in habit, although they are not attracted by lights. Their flight is short and rapid when disturbed. Each moth lays about 30 eggs, depositing them in groups of 3 or 4, occasionally more, on young fruit. The egg hatches in about 7 days and the young larva immediately enters the young fruit. The place of entrance is indicated by a light-brown secretion at that point. The larva burrows in all directions through the fruit during July, August and September. The apple tissues turn brown and decay ensues.



As many as 20 larvae have been found in a single fruit. The feeding period covers about 50 days. Mature larvae leave the fruit and enter the soil to spin cocoons.

Description: ADULT - Body 5-6 mm. long, wings extended 10-12 mm. long; dark gray. Forewings dark gray and very slender, with a broad silver-white band along the hind margin that extends to the middle part from the base of the wing; a large black band across and a yellowish-white spot on the outer margin of the middle portion; and many short yellow lines on the anterior margin. Hindwing smaller and darker than the anterior, acinaciform and margined with long hairs. EGG - Flat-oval in shape; varies from 0.38 to 0.48 mm. long and from 0.25 to 0.3 mm. wide; surface etched. Newly laid egg white, sometimes yellowish tinted, and later becomes light yellowish. LARVA - At hatching, milky white with large shiny black head and black cervical and anal shields. Mature larva about 6 mm. long, usually light pink or flesh-color dorsally and lighter shades of this color ventrally. Head and cervical shields brown. Abdominal segments show from 6-8 regularly arranged brown spots in which minute short hairs are situated. COCOON - The cocoon is spindle-shaped, about 10 mm. long and consists of two layers. PUPA - The pupa is about 5 mm. long and brown in color. The head, antennae, eyes, mouth parts, legs and wings are apparent on the pupal case. Abdominal segments are movable. The last abdominal segment has a number of long spines with hooks at the end which aid in holding the pupa in place in the cocoon. (Prepared in Survey and Detection Operations in cooperation with other ARS Agencies and the U. S. National Museum). CEIR 10(37): 9-9-60.



USDA Photograph

Adult of Argyresthia conjugella



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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations  
Plant Pest Control Division  
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United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GRASSHOPPERS continue to injure crops in areas of Indiana, Wisconsin, North Dakota and New Mexico; and FALL ARMYWORM continues damaging in several states. (p. 871). CORN EARWORM damage to grain sorghum heads extensive in most areas of Oklahoma; heavy in southwest Missouri; and damaging in central and southeast Kansas. Damage also reported in Colorado and South Carolina. (pp. 871, 872). SORGHUM WEBWORM injury to grain sorghum occurring in Texas, Oklahoma, Kansas and Missouri. GREENBUG and ERIOPHYID MITE survey conducted in Texas Panhandle from July 21 to August 19; greenbug could become a pest of wheat this fall in area. (p. 872). SPIDER MITES continue to damage corn in Colorado, Utah and Wyoming and sorghum in Arizona. (pp. 872, 873). HESSIAN FLY summer survey conducted in Nebraska. PEA APHID controls required in alfalfa in Aberdeen area of Idaho and LYGUS BUGS very high in alfalfa in Arizona. (p. 873). BEET ARMYWORM heavy on alfalfa in Imperial County, California. (p. 874).

CABBAGE LOOPER controls applied to lettuce in Arizona and New Mexico. (p. 875). Curly top caused considerable loss of yield in sugar-beet fields in Worland area of Wyoming; BEET LEAFHOPPER populations apparently not heavy. (p. 876).

A SPIDER MITE (Tetranychus sp.) injured tobacco locally in Wayne County, North Carolina; first known record of damage by spider mites to tobacco. (p. 876).

In Arizona, SALT-MARSH CATERPILLAR continues to build up in cotton in some areas and COTTON LEAF PERFORATOR damage continues medium to heavy in Yuma and Pinal Counties. (p. 877).

FALL WEBWORM very common in Virginia; light in northern West Virginia; but worst in 6 years in the vicinity of Albemarle, North Carolina. Also heavy in localized areas of east central Oklahoma and defoliating some hardwoods throughout most of New Mexico. MIMOSA WEBWORM very heavy on mimosa and honeylocust in central and southern Maryland. (p. 878).

Current SCREW-WORM situation report. (p. 879). FACE FLY remains abundant and a nuisance in areas of Illinois, Indiana and Wisconsin; and HORN FLY extremely heavy on range cattle in Grant County, New Mexico, and a nuisance in eastern third of Oklahoma. HOUSE FLY populations high in east central Oklahoma; various species of FLIES numerous and causing a problem on cattle over Wisconsin. Other pests reported bothersome were TABANIDS and LONE STAR TICK in Oklahoma and MOSQUITOES in Wisconsin and Delaware. (p. 880).

CORRECTION (p. 882).

INSECT DETECTION: European pine shoot moth recorded for first time in Oregon. (p. 877). Several new county records were reported for elm leaf beetle in Kansas (p. 878), Asiatic oak weevil in Virginia (p. 881), face fly in Missouri and Tennessee (p. 880) and giant hornet in North Carolina (p. 882).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 885).

INSECTS not known to occur in the United States. (pp. 886, 887).

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Reports in this issue are for week ending September 9, unless otherwise indicated.

WEATHER OF THE WEEK ENDING SEPTEMBER 12

Hurricane Donna's movement across Florida and up the Atlantic coast over the week-end, and a late season heat wave east of the Rockies during the first part of the period followed by autumn's first cool snap with extensive frost in the northwestern Interior highlighted the week's weather. Unusually hot, humid weather began in middle and northern areas east of the Rockies in late August and continued until September 7 or 8. During the first part of the week maximum temperatures in the 90's and minima in the 60's or 70's extended to the Canadian Border from North Dakota to Maine. Highs exceeding 100° occurred at several stations in the Dakotas including 105° at Ardmore, South Dakota, on the 4th. A high of 98° was recorded at Artichoke Lake, Minnesota, on the 5th and at Keosauqua, Iowa, on the 5th, 6th, and 7th. Grand Rapids and Lansing, Michigan, on the 7th reported 96° and 94°, respectively, the latter high a record for so late in the season. Some locations in New England had their hottest weather of the year. Ending the period of abnormally high temperatures was an extensive cold air mass which moved into the Pacific Northwest early in the week, and reached the Atlantic coast during hurricane Donna's passage. Frosts and freezes occurred in scattered sections of Washington and Idaho with local crop damage reported in the latter State. Scattered light frost occurred over much of Wyoming, and Ardmore, South Dakota, had a low of 29° on the 9th. Temperatures fell to subfreezing levels over the southwestern and scattered central localities of Montana on the 8th and 9th; lowest reported was 21° at Drummond and West Yellowstone; Helena had 29° on the 8th. In northern areas east of the Rockies, the cold air intrusion reduced temperatures by 15° to 20° or more. Heavy frost occurred in Wisconsin's cranberry bogs on the 10th, and Spencer, Iowa, had a low of 39° on the 12th. In the lower Great Plains the first vigorous cold front of the season brought a touch of autumn and the coolest weather to Kansas since the middle of May. Despite generally cooler weather the latter part of the period, temperatures for the week averaged above normal, except in some extreme southern areas and a considerable portion of the northwestern Interior where they were slightly below normal. Relative to normal, the week was hottest in portions of the Great Lakes region and in the Central Valley and southwestern sections of California where weekly averages were 6° or more above normal. Precipitation was moderate to heavy from scattered thunderstorms in the Atlantic Coastal States before hurricane Donna's passage. Donna, of course, brought heavy rainfall from Florida to Maine. Scattered light to heavy rain occurred in the midcontinent area with the passage of the cold front on the 7th and 8th. Much of the area west of the Continental Divide received only light rain or none at all. Easterly drying winds have created a high fire hazard in the forest lands of Oregon.

HURRICANE DONNA

Early damage estimates indicate Donna was one of the most destructive hurricanes ever to have reached the United States. Preliminary figures indicate that the final damage figure will be well in excess of one billion dollars. This severe hurricane, first detected over tropical waters about 700 miles east of the Lesser Antilles, followed a long sweeping curve passing north of Puerto Rico, Hispaniola, and Cuba; moved through the Bahamas, across the Keys, and onto the Gulf coast of Florida near Ft. Myers. Maintaining much of her intensity, Donna moved northeastward across the Florida Peninsula, and after passing out over the Atlantic about midway between St. Augustine and Daytona Beach crossed the North Carolina Capes, thereafter following an offshore path to eastern Long Island where she again reentered the mainland. After passing northeastward over New England the remnants of Donna moved over the Canadian Border in the vicinity of Caribou, Maine. The hurricane had traveled over 3,000 miles and, until it began to dissipate over New England, winds in excess of 100 m.p.h., had been maintained throughout her history. At Ft. Myers, where the center first reached the Gulf coast of Florida, maximum winds of 92 m.p.h., with gusts of 121 m.p.h., were reported at 1:31 p.m. on September 10. Along the North Carolina and Virginia coasts winds were in excess of 100 m.p.h.; Norfolk, Virginia, reported a peak gust of 75 m.p.h. In the New England area at the peak of the storm, Block Island, Rhode Island, measured a gust of 130 m.p.h., while farther inland at Hillsgrove (Providence Airport), Rhode Island, a gust of 81 m.p.h., was observed.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - INDIANA - Numerous infestations in localized areas throughout State; dominant species include Melanoplus femur-rubrum and M. differentialis. Damage reported along margins in soybeans, corn and tomatoes. (Matthew). WISCONSIN - M. femur-rubrum, now in adult stage, attracting more attention in light soil counties where numbers very high. Considerable damage to both new and old seedings of alfalfa expected in these areas. Populations of M. femur-rubrum also high in southeastern counties where few have reached adult stage. (Wis. Coop. Sur.). MINNESOTA - Adult survey completed on September 2. Highest populations in west central district. M. differentialis numbers higher than expected; dominant in a few fields. Migration of M. differentialis and M. bivittatus out of soil bank land observed in west central district. In general, grasshopper populations spotty throughout State; counts vary greatly from field to field. (Flaskerd, PPC). NORTH DAKOTA - Moderate grasshopper infestations continue to damage alfalfa, soybeans and flax in scattered locations; damage to fall-seeded rye widespread in Bottineau County. (Olson). NEBRASKA - M. lakinus dominant species in alfalfa in Harlan County; adults averaged 4-5 per square yard. (Bergman). IDAHO - Considerable mating activity of Dissosteira carolina noted, with populations spottedly abundant in a number of areas east of Moscow, Latah County. Camula pellucida congregating in considerable numbers on egg-laying sites on upper southern slopes along southern edges of Moscow Mountain range. (Gittins). NEW MEXICO - Grasshoppers severely damaging seedling stands of alfalfa and damaging established stands along borders in Torrance County. (N. M. Coop. Rpt., Sept. 3).

A FIELD CRICKET (Acheta sp.) - SOUTH DAKOTA - High populations continue in east central area. (Mast).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Severely damaging pastures in Kendall County (Moritz); causing heavy damage to lawns and pastures in Washington County (McClung); and heavy damage to lawns in Lubbock County, ranging 8-15 per square foot (Weigle). Medium to heavy and attacking lawns and pastures in Collin, Hunt, Ellis and Kaufman Counties. (Davis). OKLAHOMA - Causing considerable damage to Bermuda grass lawns in many areas of State; destroying some newly planted fields of alfalfa in Pawnee County; damage heavy to volunteer barley in Major County and newly planted oats in Osage County; damage extensive to recently planted experimental plots of corn and sorghum at Stillwater; and common in grain sorghum heads in many areas. (Okla. Coop. Sur.). KANSAS - Damaging fall-seeded rye, oats, barley, wheat, alfalfa and late-maturing grain sorghum in eastern portion of State. Areas affected largely east of Highway 81 and south of Kansas River; infestations very spotty and not general over area. Larval counts as high as 15 per square foot; all instars present in fields. (Gates, Peters). MISSOURI - Damaging small grain, rye and barley, in southwest area of State. (Munson, Thomas, Wood). TENNESSEE - Extremely heavy in lawns in Shelby County. Scattered infestations present over western third of State. (Mullett). ALABAMA - Damage to pastures, grain sorghum and other crops continues throughout State (Grimes); caused moderate damage to pasture grasses in Clay and Chambers Counties (Barwood) and heavy damage to grain sorghum in Lowndes County (Elgin). NORTH CAROLINA - Attacking all cover crops in Haywood County, with 15-20 per square foot; destroying a 40-to-50-acre field of millet in Granville County August 23; attacking lawns in Hoke and New Hanover Counties; active in Nash County and attacking cane in Union County August 30. (Holloway, Latham, Aycok, Williford, Rabb, Howard, Farrier). DELAWARE - Larvae in alfalfa state-wide; averaged 4 per 10 sweeps in a Sussex County field. (Burbutis, Mason).

CORN EARWORM (Heliothis zea) - TEXAS - Light to medium, attacking late milo in Hays and Caldwell Counties. (Massey). OKLAHOMA - Extensive damage continues to grain sorghum heads in most areas. Averaged 1 per head in field checked in Noble County; 2 per head in a Wagoner County field; heavy in localized areas of Muskogee, Pottawatomie and Stephens Counties; 1-4 per head in field in Marshall County. Common in alfalfa in many areas; up to 2 per sweep in southeastern fields. (Okla. Coop. Sur.). KANSAS - Averaged 1 per head in sorghum in 3 fields

in Riley County. (Burkhardt). Counts range 0-6 per head in central and southeast areas; damage reported. (Gates, Peters). COLORADO - Larvae, 7 per 10 ears, damaging corn in Rio Grande County. (Colo. Ins. Sur.) MISSOURI - Heavy and feeding in grain sorghum heads in southwest area. Larvae 30-100 per 100 heads where grain still soft and green; counts lower in more mature plantings. (Munson, Thomas, Wood). WISCONSIN - Sweet corn harvested on September 6 at University of Wisconsin in Arlington farms showed 2 percent of ears infested with both Pyrausta nubilalis and H. zea. Of ears harvested on September 10, 12.75 percent required trimming; mostly due to increased infestation of H. zea. (Wis. Coop. Sur.). SOUTH CAROLINA - Most serious insect threat to soybeans in Clarendon, Sumter, Lee and Edgefield Counties. Also damaged heads of grain sorghum in Newberry and Orangeburg Counties. (Nettles et al.). DELAWARE - Young larvae in alfalfa statewide and common in ears of corn; present in soybeans in Kent and Sussex Counties. (Burbutis, Mason).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Light to medium infestations in late milo in Hays and Caldwell Counties. (Massey). OKLAHOMA - Infestations common and populations increasing in late grain sorghum over most of State. In Arkansas River bottom, larvae averaged 1-3 per head, with pupae in most heads checked; adults emerging and active in area. Ranged 4-10 per head in a Noble County field; damaging infestations noted in Mayes and Stephens Counties; and ranged 0-40 per head in Marshall County field. (Okla. Coop. Sur.). KANSAS - Larvae averaged 4 per head in 2 fields of sorghum in Riley County. (Burkhardt). Counts in late-maturing sorghum in southeast and east central areas ranged 0 to about 200 per head. Damage reported in many counties in these areas. (Gates, Peters). MISSOURI - Causing considerable damage to grain sorghum in combination with Heliothis zea; heavier populations in late-planted sorghum. Larvae ranged 7-35 per head in southwest, 3-12 in north central area. (Munson, Thomas, Wood).

SOD WEBWORMS (Crambus spp.) - KANSAS - Continue to be a problem in Johnson County lawns. (Gates).

CORN LEAF APHID (Rhopalosiphum maidis) - DELAWARE - Numbers increased slightly on maturing corn in Sussex County; remains very low in New Castle and Kent Counties. (Burbutis, Mason). WYOMING - Found in several fields of corn in Platte County, and near Lingle, Goshen County; damage light. (Fullerton). ARIZONA - Light to medium on sorghum statewide. (Ariz. Coop. Sur.).

GREENBUG (Toxoptera graminum) - TEXAS - Survey conducted during period July 21 to August 19 on overwintering hosts in 21 panhandle counties. Specimens found on bluestem wheatgrass in Potter, Moore, Oldham, Hartley, Deaf Smith, Castro, Randall, Swisher, Briscoe and Floyd Counties and found on volunteer wheat in Deaf Smith and Moore Counties. Populations abundant on bluestem wheatgrass, and if conditions remain optimum, the pest could easily infest wheat this fall. (Daniels).

ERIOPHYID MITES - TEXAS - Survey conducted during period July 21 to August 19 on overwintering hosts in 21 panhandle counties. Specimens found on bluestem wheatgrass in 17 counties (Potter, Moore, Sherman, Hartley, Hutchinson, Donley, Deaf Smith, Castro, Parmer, Randall, Briscoe, Floyd, Hale, Carson, Gray, Roberts and Ochiltree) and on volunteer wheat in Oldham and Moore Counties on July 21. Numbers were few on volunteer wheat, however, and none were found as of August 30. Mites found on August 4 on sandbur (Cenchrus sp.) in Donley County were determined by H. H. Keifer as Aceria slykhuisi. For the most part, mites collected in the 17 counties were A. tulipae, with the exception of collections in Potter and Castro Counties, where two unclassified or new species of Aceria were found. Det. by H. H. Keifer. Both eriophyid mites and Toxoptera graminum found on bluestem wheatgrass from May through August in Bushland area; bluestem wheatgrass is apparently their best summer host. (Daniels).

SPIDER MITES (Tetranychus spp.) - WYOMING - T. telarius infesting approximately 75 percent of cornfields in Platte and Goshen Counties. Damage ranges light to moderate, with heavy damage in a few small patches. (Fullerton). UTAH - T. telarius damaged additional corn in Weber, Salt Lake, Davis, Utah and Box Elder Counties. (Knowlton). COLORADO - High populations of T. telarius causing

severe damage to corn in Prowers, Bent, Otero, Crowley and Pueblo Counties. Populations reduced in Garfield County. (Colo. Ins. Sur.). ARIZONA - T. cinnabarinus heavy in some central area sorghum fields. (Ariz. Coop. Sur.).

HESSIAN FLY (Phytophaga destructor) - NEBRASKA - Cooperative 1960 summer survey conducted in 63 fields. Average percent infested stems by areas as follows: South central (Adams, Clay, Franklin, Hall, Harlan, Howard, Kearney, Phelps and Webster Counties) - 4.1; southeast (Gage, Johnson, Lancaster, Otero, Polk and Thayer Counties) - 2.5; west (Cheyenne and Deuel Counties) - 4; southwest (Chase County) - 2. (Jones).

CORN ROOTWORMS (Diabrotica spp.) - INDIANA - Adults of D. longicornis abundant and feeding on corn silks in Marshall County fields. (Matthew). WISCONSIN - Adults of D. longicornis past peak flight. (Wis. Coop. Sur.) NEBRASKA - D. undecimpunctata howardi adults averaged 3-16 per 10 sweeps in south and southeast areas. (Bergman). WYOMING - D. virgifera feeding on silks and tassels of corn in 3 fields near Lingle, Goshen County. (Fullerton).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations show slight increase in some central area alfalfa fields, although populations generally remain very low over State. (Ariz. Coop. Sur.). UTAH - Populations now highest of season in Kane County; causing some crop damage. (Knowlton, Rose). COLORADO - Numbers decreased in Baca County alfalfa where some damage occurred. Populations not increasing; decreased in some areas of Bent, Otero, Prowers, Crowley and Pueblo Counties, with counts 1,000-2,000 per 100 sweeps. In Mesa, Delta and Garfield Counties, counts range 20-200 per 100 sweeps; none found in Mesa County. (Colo. Ins. Sur.). KANSAS - Ranged 0-5 per sweep on mature alfalfa in southeast and east central areas; none found on seedling alfalfa in same areas. (Peters). MISSOURI - Ranged 0-75 per sweep in southwest area alfalfa. (Munson, Thomas, Wood).

PEA APHID (Macrosiphum pisi) - WYOMING - Averaged 10 per sweep in alfalfa in Platte, Goshen and Laramie Counties. (Fullerton). IDAHO - Exceedingly abundant on third-cutting alfalfa in Aberdeen area, Bingham County, and on second cutting in Arco area, Butte County. Fields at Aberdeen will require controls to prevent severe crop loss. (Bishop, York). UTAH - Building up in some Weber and Salt Lake County alfalfa. (Knowlton).

PLANT BUGS (Adelphocoris spp.) - NEBRASKA - Adelphocoris sp. ranged 2-8 and A. lineolatus 3-6 per 10 sweeps in southeastern area. (Bergman). SOUTH DAKOTA - Noneconomic numbers of A. lineolatus in alfalfa in west central area. (Mast). ILLINOIS - Adults of A. lineolatus ranged 10-20 and A. rapidus 10-60 per 100 sweeps in alfalfa and clover in northern area. (Ill. Ins. Rpt., Sept. 2). MARYLAND - A. rapidus very abundant on red clover at Derwood, Montgomery County. (U. Md., Ent. Dept.). DELAWARE - Adults of A. rapidus ranged from 3 per 10 sweeps to 1 per sweep in New Castle County alfalfa; adults and nymphs present in Sussex County alfalfa. (Burbutis, Mason).

LYGUS BUGS (Lygus spp.) - ARIZONA - Nymphs and adults very high in alfalfa. (Ariz. Coop. Sur.). WYOMING - Adults averaged 5 per 25 sweeps in alfalfa in Platte, Goshen and Laramie Counties. (Fullerton). NEBRASKA - L. lineolaris averaged 10-28 per 10 sweeps in southern counties. (Bergman). ILLINOIS - Adults of L. lineolaris ranged 40-400 and nymphs 30-50 per 100 sweeps in alfalfa and clover in northern area. (Ill. Ins. Rpt., Sept. 2).

LEAFHOPPERS - OKLAHOMA - Counts of an unidentified species averaged 25 or more per square foot in some lawns in Stillwater area. (Okla. Coop. Sur.). SOUTH DAKOTA - High populations of Macrostelus fascifrons in some fields of alfalfa in west central area; averaged 60 per sweep in some fields. (Mast). MARYLAND - Empoasca fabae averaged 7 per sweep on alfalfa in Frederick County; common in fields of alfalfa in Montgomery County. (U. Md., Ent. Dept.). DELAWARE - Adults and nymphs on soybeans and alfalfa throughout State; not at economic levels. (Burbutis, Mason).

FALSE CHINCH BUG (Nysius ericae auct.) - SOUTH DAKOTA - Averaged 11 per 10 sweeps in alfalfa in west central section. (Mast).

GARDEN FLEAHOPPER (Halticus bracteatus) - MARYLAND - Common in fields of alfalfa and red clover locally in Montgomery County. (U. Md., Ent. Dept.). DELAWARE - Adults common on soybeans in New Castle and Sussex Counties. (Burbutis, Mason).

CLOVER SEED CHALCID (Bruchophagus gibbus) - CALIFORNIA - Light to medium in alfalfa in San Diego County. (Cal. Coop. Rpt.).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - ILLINOIS - Recorded in Lake County for first time. Det. by J. Kingsolver. (Ill. Ins. Rpt., Sept. 2).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NEBRASKA - Continued low; averaged less than 1 per 10 sweeps. (Bergman). SOUTH DAKOTA - Adults abundant in alfalfa in west central area; occasional larva present. (Mast). MARYLAND - Moderate numbers in several fields of alfalfa in Frederick County. (U. Md., Ent. Dept.). CALIFORNIA - Light to medium in alfalfa in Borrego Valley, San Diego County; general in Madera County. (Cal. Coop. Rpt.). ARIZONA - Larvae 6-10 per 10 sweeps in alfalfa statewide. (Ariz. Coop. Sur.). ILLINOIS - Counts in alfalfa and clover in northern area 0-600 per 100 sweeps. (Ill. Ins. Rpt., Sept. 2).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Loxostege sp. damaging alfalfa locally in Blaine County. (Okla. Coop. Sur.). KANSAS - Counts of 3 L. similalis larvae per square foot in Riley County and 8-11 in Jefferson County noted on seedling alfalfa; plants being killed in Jefferson County. (Burkhardt). DELAWARE - Larvae of L. commixtalis present in alfalfa in New Castle and Kent Counties. (Burbutis, Mason).

GREEN CLOVERWORM (Plathypena scabra) - ILLINOIS - Larvae ranged 100-200 per 100 sweeps in clover and alfalfa in northern area. (Ill. Ins. Rpt., Sept. 2).

BET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Heavy on alfalfa in Imperial County. (Cal. Coop. Rpt.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - ALABAMA - Caused limited amount of damage to soybeans in Escambia and Baldwin Counties. (Grimes). SOUTH CAROLINA - Building up slowly in soybeans in Clarendon, Sumter, Lee and Edgefield Counties. (Nettles et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Adults present in soybeans in Sussex County; all stages abundant in 15-acre field, causing very heavy feeding injury. (Burbutis, Mason).

WHITE-FRINGED BEETLES (Graphognathus spp.) - WEST VIRGINIA - Surveys in Tyler, Wirt, Ritchie, Lewis, Harrison, Tucker, Brooke, Ohio and Hancock Counties negative. (W. Va. Ins. Sur.).

#### FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Caused medium damage to apples and pears in mountain orchards of San Diego County. (Cal. Coop. Rpt.). UTAH - Adult populations unusually low in Cache Valley; some untreated orchards with infestations as low as 20-30 percent. Infestation began at low level in Weber County, with much late-season injury in untreated orchards. (Dorst, Knowlton). COLORADO - Under control in orchards in Delta County. (Colo. Ins. Sur.).

PEACH SILVER MITE (Aculus cornutus) - COLORADO - Under control in most orchards where it was severe in Delta County. (Colo. Ins. Sur.).

A SCARABAEID (Cotinis texana) - CALIFORNIA - Caused medium to heavy damage to ripening deciduous fruit in coastal area of northern San Diego County. (Cal. Coop. Rpt.).

VINEGAR FLIES (Drosophila spp.) - CALIFORNIA - Catches in fresh bait cans ran as high as 1,000 per trap in parts of Fresno County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Defoliating pecan and fruit trees throughout most of State. (N. M. Coop. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - NEW MEXICO - Loss approximately 25 percent in some areas; not as serious as past season in Carlsbad area, Eddy County. (N. M. Coop. Rpt.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEW MEXICO - Seriously damaging grape foliage in Mesilla Valley. (N. M. Coop. Rpt.).

A LEAFHOPPER - NEW MEXICO - An undetermined species caused considerable damage to grape foliage in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt.).

COCCIDS - CALIFORNIA - Medium infestations of Pseudococcus citri, producing some smut, general in citrus area of San Diego County. Saissetia oleae light to medium in coastal area of same county, with only trace infestations in Orange County. Aonidiella aurantii light to medium in Orange County. (Cal. Coop. Rpt.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Light to heavy in Orange County; only light leaf scarring reported in San Diego County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Egg counts on tomatoes increased to 15 per 100 leaves in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). OKLAHOMA - In field peas, tunneled pods ranged 4-12 percent in 2 Tulsa County fields. (Okla. Coop. Sur.). CALIFORNIA - Light to medium locally in Orange County in corn, peppers and tomatoes. (Cal. Coop. Rpt.). DELAWARE - Adults abundant in lima beans throughout State; larvae averaged 2 per 10 sweeps in a Sussex County field and 1 per 10 sweeps elsewhere; causing some feeding injury to blossoms of pumpkin squash in Kent and Sussex Counties. (Burbutis, Mason).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Egg counts in small lettuce very high; controls of small larvae very successful. (Ariz. Coop. Sur.). NEW MEXICO - All lettuce growers in Mesilla Valley applying controls. (N. M. Coop. Rpt.). DELAWARE - Larval numbers reduced on carrots and lima beans to 2.5 per 10 sweeps on carrots and present on lima beans; common on pumpkin squash, cabbage and cauliflower in Kent County. (Burbutis, Mason).

LOOPERS - SOUTH CAROLINA - Unspecified species very damaging to tomato plants in Spartanburg County. (Nettles et al.).

BEAN APHID (Aphis fabae) - CALIFORNIA - Medium infestations occurred on lima beans in Orange County. (Cal. Coop. Rpt.).

POTATO APHID (Macrosiphum euphorbiae) - COLORADO - High populations on late-maturing potato varieties; 50-1200 per 10 leaves in Rio Grande, Saguache, Alamosa, Conejos and Costilla Counties. (Colo. Ins. Sur.).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Light to medium in fields of beans in Orange County. (Cal. Coop. Rpt.). WYOMING - Damaging beans in Wheatland area, Platte County. (Fullerton). DELAWARE - Adults averaged 3 per 10 sweeps on carrots and 4-7 per 10 sweeps on lima beans in New Castle County, with nymphs present. Adults and nymphs common on lima beans in Kent and Sussex Counties. (Burbutis, Mason).

A PYRRHOCORID (Largus cinctus californicus) - CALIFORNIA - Heavy and feeding on seeding lettuce and rhubarb in Forks of Salmon, Siskiyou County. (Cal. Coop. Rpt., Aug. 26).

A SERPENTINE LEAF MINER (Liriomyza sp.) - VIRGINIA - Damaging cucurbits and could cause serious trouble. (Tarpley).

BEEF LEAFHOPPER (Circulifer tenellus) - WYOMING - Curly top has increased in sugar beets in Worland area, Washakie County, during past several weeks and has now caused considerable loss in yields. Heavy infestations of beet leafhopper not indicated. (Fullerton).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Causing widespread but not intense damage to sugar beets in Worland area, Washakie County; may become a very serious problem. (Fullerton).

PEPPER WEEVIL (Anthonomus eugenii) - CALIFORNIA - Light to medium in southwestern portion of Orange County. (Cal. Coop. Rpt.).

ROSE STEM GIRDLER (Agrilus rubicola) - UTAH - Damaging up to 90 percent of fruiting canes in Lotham raspberries in Lehi area of Utah County. (Davis).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Locally medium in fields of beans in Orange County. (Cal. Coop. Rpt.).

#### TOBACCO INSECTS

A SPIDER MITE (Tetranychus sp.) - NORTH CAROLINA - Injured tobacco locally in Wayne County July 14. As far as is known, this is the first report of spider mites attacking tobacco anywhere in the world. (Rabb, Farrier).

TOBACCO HORNWORM (Protoparce sexta) - VIRGINIA - Larvae generally light to medium in Pittsylvania County. (Dominick).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - VIRGINIA - Populations have decreased in most tobacco in Pittsylvania County. (Dominick).

#### COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TENNESSEE - Migrating over cotton-growing area in western section of State. Heaviest migration in Mississippi River counties. Late fields support bulk of heaviest infestations. Most fields past damage stage and controls not advised. Considerable boll damage occurred in southern counties since migration started around August 15. (Locke). ARKANSAS - Activity increased in late-planted cotton. (Ark. Ins. Rpt.). MISSOURI - Damage extensive in late-planted fields in western Dunklin and Stoddard Counties and throughout Butler and Ripley Counties. (Munson, Thomas, Wood). OKLAHOMA - Populations in untreated fields in Chickasha area down from previous week. Infestations now averaging up to 20 percent. Infestations continued heavy in southeast (30-50 percent in McCurtain County); light to medium in southwest (5-10 percent in Kiowa County and 7-38 percent in Harmon County). Populations varied greatly in other areas, with damage common in all cotton-producing areas of State. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - CALIFORNIA - Heavy over cotton-growing area of Madera County. (Cal. Coop. Rpt.). ARIZONA - Populations increasing in some cotton statewide; few fields in Picacho area of Pinal County heavily infested. (Ariz. Coop. Sur.). NEW MEXICO - Light to moderate in cotton. Populations appear lighter than in previous weeks, but large larvae continue to damage bolls of cotton where adequate controls not obtained. (N. M. Coop. Rpt.). OKLAHOMA - Populations in untreated fields in Chickasha area down from previous week;



infestations now averaging 30 percent. Counts ranged 15-30 percent in southeast, 2-17 percent in southwest. Damaging infestations also noted in south central section. (Okla. Coop. Sur.). MISSOURI - Egg deposition remains heavy in late-planted, succulent fields. Counts range 0-18 eggs and 0-27 larvae per 100 terminals. (Munson, Thomas, Wood). ARKANSAS - Populations continue at a high level; egg deposition prevalent over entire plant. (Ark. Ins. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Buildup continues in cotton; in some areas, migration of late-instar larvae begun. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Medium to heavy infestations continue to damage cotton in Yuma and Pinal Counties. (Ariz. Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - TEXAS - Medium to heavy infestation damaging leaves and fruit in Martin and Howard Counties. (Texas Coop. Rpt.).

BROWN COTTON LEAFWORM (Acontia dacia) - TEXAS - Heavy numbers found in gin trash in Hays, Caldwell and Guadalupe Counties. (Massey).

CABBAGE LOOPER (Trichoplusia ni) - ARKANSAS - Heavy in some fields in southeast area of State. (Ark. Ins. Rpt.). OKLAHOMA - In Chickasha area, counts down from previous week; ranged up to 20 early instar larvae per 100 plants in untreated fields. Infestations continued in Caddo County fields. Occasional larva noted in few Kiowa and Harmon County fields. (Okla. Coop. Sur.). NEW MEXICO - Virus killing large numbers of larvae in cotton areas of State. (N. M. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Larvae reaching pupal stage in infested fields in Chickasha area; no increase in numbers noted over previous week. (Okla. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations generally down in cotton because of lack of terminal growth and fruiting. Many fields still fruiting have heavy populations and require controls. (Ariz. Coop. Sur.).

A BEETLE (Conotelus mexicanus) - ARIZONA - Adults very common in blooms of cotton statewide. In Pinal County, larvae abundant around bolls of long staple cotton where blooms are not shed. Larvae not causing bolls to shed, however. (Ariz. Coop. Sur.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES (Dendroctonus spp.) - ALABAMA - An increase in activity of D. frontalis and D. terebrans was reported in 2,000 pines in Bibb County. Activity generally confined to 2 or 3 trees or small patches over a rather large area of the county. (Grimes).

COLUMBIAN TIMBER BEETLE (Corthylus columbianus) - INDIANA - Recovered in following counties: Rush, Jefferson, Scott, Clark, Floyd, Crawford, Spencer, Warrick, Vanderburgh, Posey, Gibson, Pike, Dubois, Daviess, Knox, Greene, Sullivan, Owen, Martin, Vigo, Putnam and Vermillion. (Giese).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - OREGON - About 40 infested host plants found at a Portland nursery, September 6. Larvae were identified by Val M. Carolin. First report for State. (Larson).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - MARYLAND - Infesting loblolly pines at Bel Air, Harford County. (U. Md., Ent. Dept.).

FALL WEBWORM (Hyphantria cunea) - VIRGINIA - Very common in most parts of State; particularly noticeable on sourwood and persimmon trees. (Tarpley). WEST VIRGINIA - Light on hardwoods in northern counties. (W. Va. Ins. Sur.). NORTH CAROLINA - Worst in six years in Albemarle and surrounding vicinity. Some trees completely defoliated. Sourwood, persimmon, pecan and other trees attacked. (Johnston). OKLAHOMA - Heavy on a variety of native trees in some localized areas of east central part of State. (Okla. Coop. Sur.). NEW MEXICO - Defoliating poplar, mulberry and willows throughout most areas of State. Larvae a nuisance on sidewalks. (N. M. Coop. Rpt.).

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - WASHINGTON - Infesting fir and Norway spruce trees in ornamental planting near Thornton. (Brannon, Entemann; Sept. 2).

INTRODUCED PINE SAWFLY (Diprion similis) - WISCONSIN - Very active and abundant on pines in northwestern and central areas of State. The parasite, Monodontomerus dentipes, actively parasitizing cocoons. (Wis. Coop. Sur.).

WALKINGSTICK (Diaperhomeria femorata) - INDIANA - Ten acres of oak completely defoliated in Starke County. (Gliese).

BAGWORMS - NORTH DAKOTA - A severe infestation of bagworms on juniper at Fargo. (N. D. Ins. Sur.). VIRGINIA - Thyridopteryx ephemeraeformis common in several areas of State. (Tarpley).

ELM LEAF BEETLE (Galerucella xanthomelaena) - TEXAS - Attacking elm trees in Eastland County. (Wilde). OKLAHOMA - Pupation continues in Stillwater area; new-generation adults emerging in numbers. Heavy damage noted from Okmulgee, Haskell and Latimer Counties to Washita County; elms completely defoliated in many areas of south central section. (Okla. Coop. Sur.). KANSAS - Reported for the first time in Wilson and Labette Counties. (Calkins).

LARGER ELM LEAF BEETLE (Monocesta coryli) - NORTH CAROLINA - Adults active in Iredell County and larvae defoliating elms in Lee County. (Franklin, Harmon, Farrier).

ELM CALLIGRAPHA (Calligrapha scalaris) - OKLAHOMA - Continued to damage elm foliage throughout Blaine County. (Okla. Coop. Sur.). KANSAS - Feeding on elms in Harper County. (Gates).

EUROPEAN ELM SCALE (Gossyparia spuria) - CALIFORNIA - Rapidly increasing in city of Sacramento, Sacramento County, on elms where control has been applied for Galerucella xanthomelaena. (Cal. Coop. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - MARYLAND - Very heavy on mimosa and honeylocust in central and southern sections. (U. Md., Ent. Dept.).

A WEBWORM - NORTH DAKOTA - Severe infestations in ornamental cotoneaster plantings at Linton, Emmons County, and at Harvey, Wells County. (N. D. Ins. Sur.).

HACKBERRY LACE BUG (Corythucha celtidis) - INDIANA - Severe infestations on hackberries in Lafayette area, Tippecanoe County. (Matthew).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Beginning to cut branches in elms in Stillwater area. (Okla. Coop. Sur.).

TWO-MARKED TREEHOPPER (Enchenopa binotata) - WISCONSIN - Abundant. Ovipositing heavily on Viburnum spp. in Dane County. (Wis. Coop. Sur.).

SCALE INSECTS - NORTH CAROLINA - Heavy infestation of Toumeyella liriodendri on magnolias in Johnston County. (Wray). Icerya purchasi infesting quince, magnolia and pyracantha in Lenoir County. (Jones, Farrier). Pulvinaria acericola attacking boxwoods and camellias in Bladen County, August 31. (Bowers, Wray).

VIRGINIA - Unaspis euonymi attacking plants in areas of King William, Middlesex, Roanoke and Campbell Counties. (Kelly, Edwards, Boone, Campbell).

GLADIOLUS THRIPS (Taeniothrips simplex) - VIRGINIA - Infesting 3 varieties of gladiolus in home nursery in Henrico County. More prevalent this year than last. (Davis).

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - DELAWARE - Adults feeding heavily on a variety of shrubs in Newark area of New Castle County. (Kelsey).  
 MARYLAND - Adults injuring azaleas locally in Silver Spring, Montgomery County. (U. Md., Ent. Dept.).

SLUGS - WISCONSIN - Exceptionally numerous in many sections from north to south. Most damage is to ornamentals in flower borders and gardens. (Wis. Coop. Sur.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - MARYLAND - Infesting chrysanthemums at Hurlock, Dorchester County. (U. Md., Ent. Dept.).

NARCISSUS BULB FLY (Lampetia equestris) - IDAHO - Spotted infestations on narcissus bulbs, with heavy damage to infested bulbs in Caldwell area. (Bechtolt).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - OREGON - Damaging gardens and flower gardens in the Willamette Valley. (Capizzi).

INSECTS AFFECTING MAN AND ANIMALS

Current SCREW-WORM (Callitroga hominivorax) Situation Report

For Week Ending September 11, 1960

State	Cumulative Totals - 1960 :		Counties or Parishes
	Cases	Premises	
Alabama	1	1	Geneva
Arkansas	11	10	Chicot Ashley
Louisiana	12	11	Richland Franklin Red River
Mississippi	6	4	Issaquena Washington
Totals	30	26	8

Date First Case Found This Year: Alabama 3-30-60 Arkansas 7-26-60  
 Louisiana 7-12-60 Mississippi 7-29-60

Screw-worm Cases Intercepted at Inspection Stations: 1958 - 8  
 1959 - 6 1960 - 18 to Date.

(Anim. Dis. Erad. Div.)

FACE FLY (Musca autumnalis) - MISSOURI - Reported for the first time from Shelby, Macon and De Kalb Counties. (Munson, Thomas, Wood). TENNESSEE - Found in Washington County. New county record. (Mullett). ILLINOIS - Averaged 53 flies per head of cattle on pasture in northern half of State. Counts of 20-125 per head. (Ill. Ins. Rpt.). INDIANA - Populations remain moderately high throughout northern two thirds of State. Annoying man around swimming pool areas, Lafayette, Tippecanoe County. Heavy populations also locally in Warren County where hundreds of these flies are migrating to a farmhouse, clustering on the outside walls, gaining entrance into the building wherever possible. (Matthew). Caused annoyance to people at tennis courts and other recreational areas in Lafayette area. (Russell). WISCONSIN - Caused alarm in southern counties where some herds are reported to have high populations. (Wis. Coop. Sur.). WEST VIRGINIA - Population decreasing slightly on cattle. (W. Va. Ins. Sur.).

HORN FLY (Siphona irritans) - WEST VIRGINIA - Populations increasing generally on cattle. (W. Va. Ins. Sur.). INDIANA - Populations range 300-500 per unsprayed animal in Tippecanoe County. (Dobson). OKLAHOMA - Counts per animal averaged 400-500 on cows and up to 1,500 on bulls in southeast. A nuisance to cattle throughout eastern one-third of State. Populations averaged 100-200 per animal on cows in a herd in Noble County. (Okla. Coop. Sur.). NEW MEXICO - Extremely heavy populations on range cattle in Grant County. (N. M. Coop. Rpt.).

MOSQUITOES - UTAH - Culex tarsalis and Aedes nigromaculis well below normal now. Culiseta inornata numbers normal. Aedes dorsalis annoying in areas of Salt Lake and Davis Counties. Mosquitoes moderately annoying in many parts of Cache County. (Fronk, Knowlton). OKLAHOMA - Several species in annoying numbers in the east central area. (Okla. Coop. Sur.). WISCONSIN - Mosquitoes very abundant in many sections of State. Numbers lessening at Madison but species in houses remaining troublesome. Reported to be annoying herds of dairy cattle in several sections. A Walworth County report states that milk production has been cut considerably. (Wis. Coop. Sur.). DELAWARE - Collections of mosquitoes from an artificial resting box at Bombay Hook indicate that Anopheles quadrimaculatus is still very abundant in the area. (Burbutis, Mason).

HOUSE FLY (Musca domestica) - OKLAHOMA - High populations common in east central area and continuing to increase. Reported to be the highest numbers noted in Poteau area during last several years. (Okla. Coop. Sur.).

FLIES - WISCONSIN - House flies were perhaps more troublesome than in any week this season. Several species of flies on cattle are most numerous and causing problem over State. (Wis. Coop. Sur.).

TABANIDS - OKLAHOMA - Medium to heavy numbers of several species annoying to livestock throughout eastern half of State. Counts averaged less than 1-3 per animal in the area. Populations in Payne and Noble Counties somewhat lower. Tabanus sp. and T. abactor are the major species present. Chrysops spp. average 2-3 per animal. (Okla. Coop. Sur.).

HOG LOUSE (Haematopinus suis) - UTAH - Numerous on some pigs at Ogden, Weber County. (Knowlton).

BROWN DOG TICK (Rhipicephalus sanguineus) - NEW MEXICO - Continues to be a problem to homeowners with dogs in several areas of State. (N. M. Coop. Rpt.). ALABAMA - Heavy infestations in houses in Dallas County. (Grimes).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Larvae continued to be a nuisance in wooded areas in southeast. Adults ranged 10-15 per animal on cattle checked in same area. (Okla. Coop. Sur.).

### STORED-PRODUCT INSECTS

GRAIN BEETLES - TEXAS - Medium infestation of larvae and adults of Rhyzopertha dominica and Cryptolestes pusillus in stored wheat and milo in Denton County. (Tex. Coop. Rpt., Sept. 2). UTAH - Saw-toothed grain beetles severely infesting a granary near Vernal, Uintah County. (Knowlton, Sept. 2).

### BENEFICIAL INSECTS

A CERAMBYCID (Crossidius pulchrus) - NEW MEXICO - Killing out turpentine weed in large areas of Torrance, Guadalupe and Lincoln Counties. (N. M. Coop. Rpt., Aug. 27).

LADY BEETLES - WYOMING - Adults of Hippodamia sp. averaged 5 and larvae 3 per sweep in alfalfa in Platte, Goshen and Laramie Counties. (Fullerton).

LACEWINGS (Chrysopa spp.) - RHODE ISLAND - Larvae very numerous in alfalfa; most important predator evident at this time. (Hansen). VIRGINIA - Common in peach orchards in Amherst County; also annoying to workers. (Wilkins).

NABIDS (Nabis spp.) - WYOMING - Adults averaged 8 per 25 sweeps in alfalfa in Platte, Goshen and Laramie Counties. (Fullerton). NEBRASKA - Averaged 6-14 per 10 sweeps in areas surveyed. (Bergman).

FLOWER BUGS (Orius spp.) - WYOMING - Adults averaged 10 per plant in corn in Platte and Goshen Counties. (Fullerton). NEBRASKA - Averaged 6-10 per 10 sweeps in southern area. (Bergman).

A SCOLIID (Scolia dubia) - MARYLAND - Abundant about lawns in Prince Georges and Anne Arundel Counties and in Baltimore. (U. Md., Ent. Dept.). VIRGINIA - Common in lawns and elsewhere in Patrick, Spotsylvania, Tazewell, Giles, Hanover and Prince William Counties. (Rowell).

### MISCELLANEOUS INSECTS

CRICKETS - NORTH DAKOTA - Large numbers in many homes in Brookings County area. (Mast). MINNESOTA - Populations high in southwest, west central and northwest districts. Migrations very evident in Wilkin and Clay Counties. (Flaskerd). RHODE ISLAND - Acheta sp. adults moderately numerous in Narragansett area of Washington County. (Hansen, Sept. 2).

A SOLDIER FLY (Hermetia illucens) - NORTH CAROLINA - Infesting earthworm beds in Iredell and Wake Counties. (Franklin, Wray, Farrier).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - VIRGINIA - A general nuisance, being attracted to lights in homes in large numbers in Cumberland, Buckingham, Montgomery, Henry, New Kent, Spotsylvania and Appomattox Counties. These are all new county records. (Rowell, Amos).

OLD-HOUSE BORER (Hylotrupes bajulus) - MARYLAND - Infesting structural wood in homes at Rockville and Baltimore. (U. Md., Ent. Dept.).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - NORTH DAKOTA - Migration into homes continues over a wide area. (N. D. Ins. Sur.).

A LIBYTHEID (Libytheana bachmani) - TEXAS - Large numbers of this butterfly noted migrating across Val Verde, Howard and Dawson Counties. Caused concern to many growers. (Texas Coop. Rpt.).

A DAMPWOOD TERMITE (Zootermopsis angusticollis) - OREGON - Winged forms began appearing in western part of State week of September 4. (Every).

GIANT HORNET (Vespa crabro germana) - NORTH CAROLINA - Identified from Cherokee County; a new county record. (Stephens).

CORRECTION

CEIR 10(37):852 - A GRAPE LEAFHOPPER (Erythroneura sp.) - should read A GRAPE LEAFHOPPER (Erythroneura sp.).

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Weather - Continued from page 870

Crop damage was most severe in the Citrus Belt of Florida. Along the remainder of the path of Donna, crop damage was reported to be heavy. Rainfall amounts ranged from 4 to 12 inches. Storm tides of 10 to 12 feet inundated the Florida Gulf coast from the Everglades to Ft. Myers Beach. Early warnings, which resulted in mass evacuations in the Caribbean area and on the Gulf and Atlantic coasts, held loss of life to a low figure. The heaviest, in excess of 100 deaths, was in Puerto Rico and outlying West Indian Islands where casualty figures are still tentative. In Florida, where tens of thousands were evacuated, there were only eight deaths. Preliminary figures for North Carolina and Maryland list one death each and three died in Massachusetts. This is an exceptional record when compared with hurricanes of 25 to 30 years ago when hundreds died in storms where damage was as little as one percent of that caused by Donna. (Summary supplied by U. S. Weather Bureau).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<b>ALABAMA</b>							
Auburn 9/9	12	6	12			44	2
<b>ARKANSAS</b>							
Hope 9/1-7	36	6				29	
*Morrilton 9/1-7	29					176	
Kelso 9/1-7	36					35	
<b>CALIFORNIA</b>							
Davis 8/31-9/8	216			18		36	
<b>ILLINOIS</b>							
Urbana 9/2-8	88		18	28		72	
<b>INDIANA (Counties)</b>							
Lawrence 8/31-9/2	28		3	11	9	10	
Tiptecanoe 9/1-7	9				2	12	
Vanderburgh 8/31-9/6	57		8	22	7	25	
<b>KANSAS</b>							
Garden City 8/29-9/2					2	52	
Hays 9/2-7	151		5		2	40	
Manhattan 9/2-3, 8	8		11	1		19	
Wathena 8/29-31, 9/2-5	104		10	23	14	162	
<b>MARYLAND</b>							
Fairland 8/26-9/2	27	32		19	22	38	
<b>MISSISSIPPI</b>							
*Stoneville 9/2-8	907	590	126	29		348	56
<b>NEBRASKA</b>							
Alliance 8/28-9/1	25			1		16	
Kearney 8/30,9/2	23			10		66	
Lincoln 9/2-8	73		1		3	49	
North Platte 8/31-9/6	66	5		29	5	106	
Scotts Bluff 8/25-31	62				2	3	
<b>NEW JERSEY (County)</b>							
Burlington 9/1,6	163		58	13	5	111	
<b>SOUTH CAROLINA</b>							
Charleston 9/5-11	5	60	13	291		144	21
Clemson 9/2-9	480	187	331	4	1	143	7
<b>TENNESSEE (Counties)</b>							
Maury 8/30-9/5	82	16	164	8	3	76	
Cumberland 8/30-9/5	15	4	6	6	2	25	
Johnson 8/30-9/5	128	24	324			92	
<b>TEXAS</b>							
Brownsville 8/30-9/2	1	246		18	2	8	4
Waco 9/3-9	356		56			347	1

\* Two traps - Morrilton, Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Protoparce sexta	quin.	Heliothis zea	vires.
<u>WISCONSIN</u>							
Janesville 8/30-9/5	124					11	
Middleton 8/30-9/5	167	84				2	
*Arlington 8/30-9/5	613	19				23	
Rosendale 8/30-9/5	80					7	
Fairwater 8/30-9/5	190					36	
Ripon 8/30-9/5	263					11	
*Theresa 8/30-31	112					17	
Oakfield 8/30-9/5	43					21	
Green Bay 8/30-9/5	39						
Antigo 8/30-9/5	58						

Additional Collections

CALIFORNIA - (Davis - 8/31-9/8); Prodenia praeifica -256; Spodoptera exigua - 2,621. TEXAS - (Brownsville - 8/30-9/2); Pectinophora gossypiella - 12,524.

\*Two traps - Arlington; 3 traps - Theresa.



INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported July 31 by the Plant Quarantine Division, ARS, USDA, are as follows:

A MEALYBUG (Pseudococcus vitis (Nied.)) ( a pest of grapes which is widespread in Southern Europe and eastern Mediterranean region) on pomegranates in baggage from Syria at New York, New York, on August 28, 1959.

A PSYLLID (Homotoma ficus (L.)) (a pest of minor importance to fig in the Mediterranean region) on fig cuttings in baggage from Yugoslavia at San Pedro, California.

KHAPRA BEETLE (Trogoderma granarium) 29 times; at Honolulu, Hawaii, one time in stores; at San Pedro one time in stores; at Galveston, Texas, one time in stores; at Houston, Texas, 3 times in stores; at Savannah, Georgia, 2 times with cargoes of Myrobalan nuts and used sugar bags; at Charleston, South Carolina, one time in stores; at Norfolk, Virginia, one time in hold residue; at Philadelphia, Pennsylvania, 2 times in stores; at New York 13 times in stores and with cargoes of Myrobalan nuts and gum; at Boston, Massachusetts, 2 times with gum cargo and cereal straw bedding for horses on a plane; and at Cleveland, Ohio, 2 times in peanut residue in quarters.

A CHRYSOMELID (Psylliodes sp.) (possibly P. chrysocephala (L.)), a widespread important pest of crucifers in Europe) 19 times in stores; at Boston 2 times; at Philadelphia 8 times; at New York 7 times; at Seattle, Washington, one time; and at Miami, Florida, one time.

A LYGAEID (Blissus n. sp.) with grass samples in baggage from Mexico at Laredo, Texas.

A WEEVIL (Hyperodes sp.) (possibly the species that is of considerable importance to carrots and celery in Argentina and Uruguay) in carrots in stores from Argentina at Philadelphia.

A WEEVIL (Phlyctinus callosus Boh.) (a leaf-eating species of considerable importance to grape in South Africa) alive with grape cargo from South Africa at New York.

A WEEVIL (Naupactus xanthographus (Germ.)) (a grape root weevil of considerable importance in Chile, Argentina and Uruguay) 3 times in grape cargoes from Chile at New York.

A SWEETPOTATO WEEVIL (Euscepes porcellus Boh.) in sweetpotatoes in baggage from British Honduras at Miami.

A POTATO WEEVIL (Premnotrypes sp.) (a serious pest of potatoes) 3 times; at Mobile, Alabama, in stores from Peru, at Philadelphia in stores from Columbia and at Miami in baggage from Columbia.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 3 times in baggage; at New York 2 times and at San Pedro one time.

MEXICAN FRUIT FLY (Anastrepha ludens) in baggage from Mexico destined for California 7 times; at El Paso, Texas, 2 times; at Nogales, Arizona, one time; at San Pedro one time; and at San Ysidro, California, 3 times.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) in baggage from Europe at Detroit, Michigan, and at New York.

WHITE GARDEN SNAIL (Theba pisana (Muller)) 8 times in general and military cargo from the Mediterranean area; at New York 2 times; at Charleston 3 times; and at New Orleans 4 times.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

FIG WAX SCALE (Ceroplastes rusci (L.))

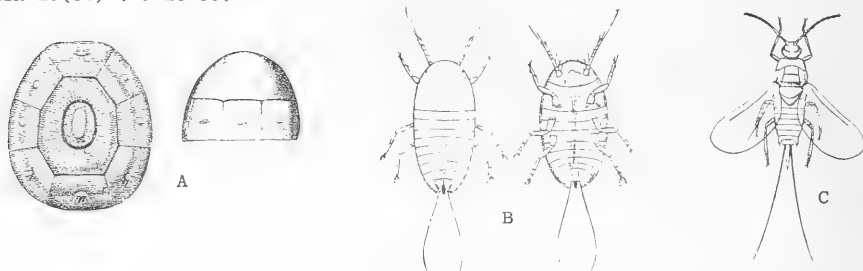
**Economic Importance:** This coccid is a widespread pest of fig in many parts of the world. The crop is frequently severely injured, especially in the Mediterranean area. Populations build up to high levels then practically disappear for long intervals. Predators and parasites are a major factor in reducing infestations in some areas. Damage occurs from deposits of honeydew and subsequent development of sooty molds and from feeding of second and third-stage females on the branches. Heavily attacked trees become weakened and unproductive. C. rusci attacks many other plants including citrus, olive, camellia, hawthorn and castorbean. It has been frequently intercepted at U. S. ports of entry.

**Distribution:** Widely distributed in the Mediterranean area. Also reported from other areas but validity of records difficult to confirm. It is not known to occur in the United States, however.

**Hosts:** Primarily a pest of Ficus spp. Also feeds on camellia, hawthorn, holly, citrus, olive and many other hosts.

**Life History and Habits:** In Italy, egg laying occurs generally during June. Each female produces around 800-1500 eggs which are retained beneath the abdominal cavity. The larvae fix themselves on the upper surface and along the veins of the fig leaves. By the second stage, they assume a star-shape. Development is rapid, and adults appear by the end of July and migrate over the branches. There are one or two generations a year in Italy depending on the location within the country. There are two generations a year in Algeria and the second-generation females are often very numerous. In France, the females pass the winter in the second stage, reaching the third stage the following spring.

**Description:** ADULT globose, hemispherical, covered by abundant waxy secretion of a solid consistency which forms a carapace. The secretion is distributed laterally in 8 rectangular plates around the body--3 on each side, one cephalic, one anal. At the center of each plate is a white waxy, punctiform secretion. Anal plates have two white points. The upperside of the insect is covered by a single octagonal plate, the center of which shows an oval halo. The general color of the waxy secretion is a violaceous gray, more deeply colored in sutural zones between the plates. When the wax is removed, C. rusci appears smooth and uniformly brown in color. Dimensions - 4.5 mm. long by 3.4 mm. wide by 2-3 mm. high. Male PUPARIUM elongate, starlike with white waxy cones; 2-2.2 mm. long by 1 mm. wide. MALE is winged, red colored with white wings. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).  
CEIR 10(38) : 9-16-60.



Figures of Ceroplastes rusci: A - Adult female scaled; dorsal and lateral views. B - First stage larva; dorsal and ventral view. C - Adult male.

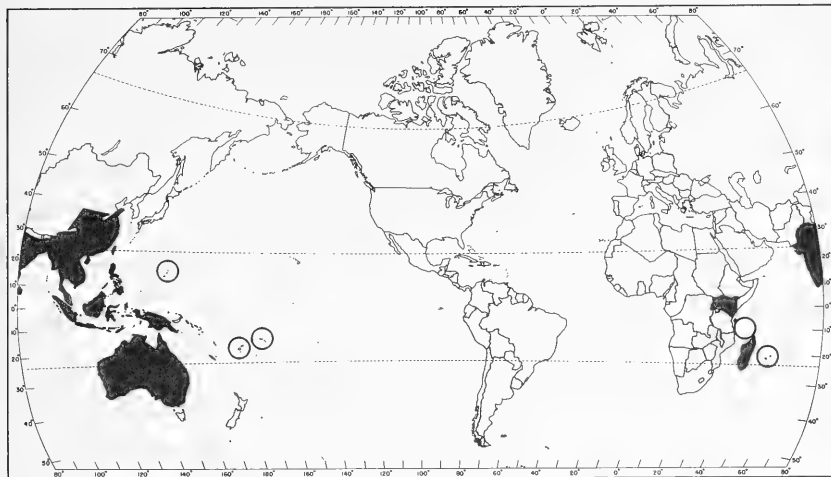
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

PADDY CUTWORM (Spodoptera mauritia (Boisd.))

Economic Importance: This noctuid is known as a pest of graminaceous crops in several areas, particularly in the Australian, Indian, and Pacific regions. Damaging outbreaks build up periodically on rice in Fiji Islands, Indochina, Guam, Indonesia, India and the Philippines. Damage to sugarcane in Queensland, Australia, and corn in the Philippines has been reported. A subspecies, S. mauritia acronyctoides, was recorded in 1958 in Hawaii; and the pest was observed damaging Bermuda grass in 1959.

Distribution: India, Ceylon, Indochina, China, Indonesia, Formosa, Madagascar, Mauritius, Comoro Islands, Australia, New Guinea, Malaya, Guam, Fiji, Samoa, Philippines and other Pacific Islands. In Africa, one moth has been taken in Tanganyika; and the pest is recorded in Uganda and Kenya.

Hosts: Principally a pest of grasses including rice, corn, sugarcane, wheat and barley. Also recorded from other plants including tobacco, tomato and cabbage.



Distribution of Spodoptera mauritia

Life History and Habits: In India, eggs are deposited, usually on the undersurfaces of the leaves, in batches. These are covered with buff-colored hairs from the body of the moth. The larvae feed at night, hiding during the day under debris or other shelter. Pupation occurs in the soil, and moths emerge in about 10 days.

Description: Specimens of Spodoptera mauritia resemble specimens of our North American Laphygma frugiperda, except that the reniform spot of the forewing of mauritiae is dark brown and the veins of the hindwings are usually partly covered with fuscous scales. A detailed description of S. mauritia is included in Hampson, G. F. 1909 Catalogue of the Noctuidae Brit. Mus. pp. 256-257. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).  
CEIR 10(38): 9-16-60



USDA Photograph

Adults of Spodoptera mauritia and Laphygma frugiperda

(Left Top - Male S. mauritia; Left Bottom - Female S. mauritia;  
Right Top - Male L. frugiperda; Right Bottom - Female L. frugiperda)



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*Cooperative*

**ECONOMIC INSECT**

**REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

CORN EARWORM common to heavy in late crops in several states; controls applied to soybeans in Arkansas and Virginia. FALL ARMYWORM damage continues in Oklahoma, Texas, Arkansas, Louisiana and Kansas. (p. 891). SORGHUM WEBWORM injury extensive in late-planted sorghum in Oklahoma and WESTERN BEAN CUTWORM damaging ears of corn in 3 Nebraska counties. (p. 892). SPOTTED ALFALFA APHID appeared in Umatilla County, Oregon; abundant enough to cause damage to alfalfa. Becoming severe in Copay area of California and per sweep counts 5-10 in Colorado and 10-27 in southwest Nebraska. Also appeared in Illinois. THREE-CORNERED ALFALFA HOPPER infestations very heavy in alfalfa in Arizona; averaged 25 per sweep in Burleson County, Texas; and light to heavy in Oklahoma. (p. 983). MEADOW SPITTLEBUG abundance survey in Illinois reported. (p. 894).

FALL WEBWORM defoliation of pecan and other deciduous trees increasing in southeastern Alabama; moderately numerous in southwest Pennsylvania; and heavy and common throughout east central and southeast Oklahoma, being considerably higher in these areas of Oklahoma than noted in 1959. (pp. 895, 898).

CITRUS INSECT situation reported in Florida. (p. 896).

BOLL WEEVIL, BOLLWORM and CABBAGE LOOPER damage to cotton continues in several states. (p. 897).

ASIATIC OAK WEEVIL caused heavy defoliation of forest trees in some Pennsylvania localities (p. 898), and MIMOSA WEBWORM very severe on honeylocust in southwestern Pennsylvania and entirely defoliated honeylocust in central and southern Indiana. (p. 899).

SCREW-WORM appearing in few herds of cattle in Oklahoma and outbreaks reported in 8 herds in Franklin and Richland Parishes, Louisiana. FACE FLY very heavy on cattle in some western sections of Pennsylvania and continues to invade homes in areas of Indiana. (p. 900).

INSECT DETECTION: New State records reported were Dusky sap beetle in California (p. 895) and a brown spider, *Loxosceles reclusa*, in Nebraska (p. 901). Western cherry fruit fly recorded for first time in Del Norte County, California. (p. 895).

CORRECTIONS (p. 904).

ADDITIONAL NOTES (p. 904).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS. (p. 905-912).

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Reports in this issue are for week ending September 16, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK  
MID-SEPTEMBER TO MID-OCTOBER  
1960

The Weather Bureau's 30-day outlook for the period mid-September to mid-October calls for temperatures to average below seasonal normals from the Continental Divide eastward to the Appalachians, with greatest departures over the Southern Plains and lower Mississippi Valley. Above-normal temperatures are indicated west of the Continental Divide and near normal east of the Appalachians. Precipitation is expected to exceed normal over the eastern half of the Nation, but subnormal amounts are predicted west of the Continental Divide. In the remaining area, near normal amounts are indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 19

Temperatures for the week averaged well below normal east of the Mississippi, as much as 6° in some sections, and generally normal to well above in the Far West. Scattered light frost was widespread in northern areas, occurring as far south as northwestern Nebraska on the 12th and northwestern Ohio on the 14th. On the 17th, widespread light frost occurred in susceptible places in New England, with a low of 37° at Providence, Rhode Island, the lowest ever recorded there so early in the season. Below-freezing temperatures and snowfall were reported from mountainous areas of Colorado the latter part of the period. Ninety degree temperatures, for the most part, were limited to extreme southern areas, although they extended northward to southwestern Oregon at the beginning and end of the period and to southern Nebraska early in the week.

Frontal activity and a relatively small storm area produced moderate to heavy rainfall from the east central Great Plains to the Great Lakes region late in the period. Hurricane Ethel brought heavy rains to an area extending from Alabama and adjacent areas to central and eastern portions of Tennessee and Kentucky on the 16th and 17th. Over 6 inches were recorded in southern Alabama. Hurricane Donna, moving from the middle Atlantic coast northward over New England at the beginning of the week, produced heavy rains from the coast to the Appalachians. Rains of 4 to 9 inches fell on the lower east coast of Florida during the weekend. Elsewhere in the Nation, particularly in southern Texas and the Far West, rainfall was very light.

HURRICANE ETHEL

Hurricane Ethel developed rapidly in the central Gulf of Mexico early on the 14th. The position and intensity of the storm were definitely verified by the Navy MAMOS (Marine Automatic Meteorological Observation Station) at 25°N., 90°W. at 9:30 a.m., c.s.t. This was the first hurricane discovered by this new meteorological instrument system. The hurricane moved northward, intensified rapidly, with reported central pressure of 972 mb., and winds of 140 knots during the afternoon of the 14th. However, the intensity of the hurricane decreased quite rapidly before it reached the coast near Biloxi, Mississippi, during the afternoon of the 15th, and sustained hurricane force winds were not observed at any land station.

Burrwood, Louisiana, had sustained winds of 52 m.p.h., with gusts to 70 m.p.h., and Fort Morgan, Alabama, reported 60 m.p.h., also with gusts to 70 m.p.h. Tides up to 4 to 5 feet above normal were felt along the Mississippi-Alabama coast. Locally heavy rains extended northward from the coast, with up to 5 to 6 inches reported in portions of Mississippi and Alabama as the weak circulation moved into the central Ohio Valley by the 17th. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - OREGON - Threatening infestations of Melanoplus femur-rubrum present in Washington and Columbia Counties. Foliage feeding in red clover and alfalfa observed but damage not at economic levels week of September 11. (Every). MINNESOTA - Checks in soil bank land in west central district showed heavy numbers of M. differentialis present. Land seeded with sweetclover had higher numbers than those seeded with alfalfa, red clover or other legumes as a rule. Severe damage to soybeans and corn extends well into fields in area. (Minn. Ins. Rpt., Sept. 9). WISCONSIN - Several fields of alfalfa partially defoliated by M. femur-rubrum in Portage County. Majority of fields of alfalfa and corn in area of dense grasshopper population show little evidence of severe feeding injury. M. differentialis observed mating in Dane County; and species appears dominant in corn and soybean fields in Portage and Waushara Counties. (Wis. Coop. Sur.).

CORN EARWORM (Heliothis zea) - OREGON - Infestations averaged 60 percent in Umatilla County fields checked in early September. (Capizzi). UTAH - Tips of ears of canning corn were 25-50 percent infested in Utah County; only about 5 percent of ears harvested had serious damage. This is slightly higher than in 1959 which also was a light damage year. (Dorst, Knowlton). COLORADO - Moths averaged 285 per week in light trap in Otero County. (Colo. Ins. Sur.). OKLAHOMA - Light to heavy, 0.5-2 per sweep, in alfalfa in southern area. Common in late corn and grain sorghum over most of State. (Okla. Coop. Sur.). ARKANSAS - Infestations on soybeans observed in nearly all areas of State; early soybeans escaped infestation while late crop infested. A large acreage has been treated to prevent serious damage from pod feeding. Also attacking sorghum in several areas. (Ark. Ins. Sur.). WISCONSIN - Percent infestation of ears in field corn by counties as follows: Dane - 6, Dodge - 9, Fond du Lac - 13, Green Lake - 0, Winnebago - 0, Waushara - 6, Waupaca - 2, Portage - 6, Marquette - 0. Instars ranged 2-5, majority being in third. Greatest incidence of infestation in late-planted corn. Adults continue to appear in blacklight traps. (Wis. Coop. Sur.). INDIANA - Populations very heavy in late sweet corn. (Everly). MARYLAND - Light to medium injury to soybean pods noted in large field at Bushwood, St. Marys County. (U. Md., Ent. Dept.). DELAWARE - All instars common in ears of corn in Sussex County. (Burbutis, Mason). VIRGINIA - Severe in several fields of soybeans near Richmond; 3 larvae per 10 plants causing 20 percent reduction in pods. (Matheny). Most heavily infested soybeans in Essex, Richmond, Lancaster, Northumberland and Westmoreland Counties treated. In Middlesex and Gloucester Counties, badly infested fields treated. In general, infestations in soybeans do not appear to be as severe as at same time in 1959. (Amos, Sept. 9). SOUTH CAROLINA - Appears to be greatest threat to soybeans in Allendale County. (Nettles et al.). ALABAMA - Severe infestations on corn in Randolph County; damaging ears and stalks in approximately 260 acres, with 1-5 larvae per stalk. (Barwood, Sept. 13).

FALL ARMYWORM (Laphygma frugiperda) - KANSAS - Damaging newly seeded rye in Saline and Rice Counties. (Gates). OKLAHOMA - Continues to cause extensive damage to wide variety of crops throughout State. Damaging lawns in Washington, Nowata, Mayes, Tulsa, Atoka, Choctaw, Bryan, Love, Kingfisher and Payne Counties. Damaging late grain sorghum, late corn, alfalfa, small grain, grass pastures, etc. throughout most of State. Many fields of alfalfa heavily damaged in various parts of State during past 2 weeks. (Okla. Coop. Sur.). TEXAS - Heavy in grain sorghum and corn in Willacy County. (Deer). ARKANSAS - Attacking sorghum in several areas. (Ark. Ins. Sur.). LOUISIANA - Medium to heavy infestations in Red River, Allen and St. Landry Parishes. (Spink). VIRGINIA - Causing severe damage to Sudan grass and fall rye near Midlothian, Chesterfield County. (Matheny).

EUROPEAN CORN BORER (Pyrausta nubilalis) - PENNSYLVANIA - Very abundant in untreated late sweet corn and quite numerous in treated corn in southwest area. (Udine). MINNESOTA - High numbers of second generation present in some corn-fields in central and west central districts. Most larvae second instar and feeding in shanks and ears. (Minn. Ins. Rpt., Sept. 9).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Populations continue to increase and cause extensive damage in many fields of late-planted grain sorghum in most areas of State. Counts averaged as high as 50 per head in some fields in south central and east central areas; most counts considerably lower. (Okla. Coop. Sur.). KANSAS - Experimental sorghum plots in Neosho County heavily damaged. (Jones). ARKANSAS - Infesting sorghum in several areas. (Ark. Ins. Sur.). NORTH CAROLINA - Attacking field of milo in Mecklenburg County on August 25. (Hobson, Campbell).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Larvae infesting corn ears in Dundy, Chase and Perkins Counties. Some fields in Dundy County had 100 percent of ears damaged, with 3-4 larvae per ear. (Bergman).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - DELAWARE - Summer and overwintering forms fairly common in several fields of corn in southern Sussex County. (Burbutis, Mason).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - High populations in heads of sorghum in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.) UTAH - Damaged few fields of corn at Elwood, Box Elder County. (Knowlton). WYOMING - Infestations ranged light to heavy in 9 of 12 fields of corn checked in Platte County. (Fullerton).

SPIDER MITES - NEVADA - Medium infestation on corn in Fallon, Churchill County. (Burge, Martinelli).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Still present in late grain sorghum in Burseson County; damage medium. (Doering).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - SOUTH DAKOTA - Causing considerable damage to corn in small area in Moody County; adults working on ears of corn opened by birds. (Mast). WISCONSIN - Continues to feed on corn silks and exposed ear tips in Columbia and Dodge Counties where 40-80 percent of ears affected. Less common in more northerly counties of central area. (Wis. Coop. Sur.). ILLINOIS - Adults abundant in fields of red clover, especially near corn. (Ill. Ins. Rpt.).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Populations medium to heavy in grain sorghum statewide. (Ariz. Coop. Sur.). NEVADA - Heavy in many fields of corn in Fallon area, Churchill County. (Martinelli). UTAH - Light to medium on barley and corn in Washington County. (Knowlton). WYOMING - Total of 10 of 12 fields of corn surveyed in Platte County infested; infestation ranged very light to moderate. (Fullerton).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - First winged adults beginning to appear on sticky-board traps in central area. Field infestations still low. (Ariz. Coop. Sur.).

ARMYWORMS - SOUTH CAROLINA - Causing damage to pastures and lawns in Barnwell, Jasper, Lancaster, Chesterfield and Newberry Counties. (Nettles et al.).

A SOD WEBWORM (Crambus mutabilis) - OKLAHOMA - Causing damage to some lawns in Tulsa and Payne Counties. (Okla. Coop. Sur.).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Heavy infestations in St. Augustine grass lawns in Montgomery County. (Elgin, Sept. 13).

A SCALE INSECT (*Odonaspis ruthae*) - NEVADA - Medium infestation on Bermuda grass in Las Vegas, Clark County. (Zoller).

A HESPERIID (*Hylephila phylaeus*) - CALIFORNIA - Heavy populations developed in hybrid Bermuda grass in Chula Vista, San Diego County. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Appeared in Umatilla County during late August and early September; abundant enough to cause some damage to third-cutting alfalfa. (Every). CALIFORNIA - Becoming severe in alfalfa in Copay area, Glenn County. (Cal. Coop. Rpt.). UTAH - Required almost no chemical control in Washington County during past season. (Knowlton). COLORADO - Counts 500-1,000 per 100 sweeps in alfalfa in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). NEW MEXICO - Appears generally light throughout most of State. (N. M. Coop. Rpt.). OKLAHOMA - Light, up to 10 per sweep, in alfalfa in central area; up to 60 per sweep in south central area; and very light, 0-5 per sweep, in southwest and southeast areas. (Okla. Coop. Sur.). KANSAS - Counts per sweep on September 9 were 10 in Rush County, 1 in Ellis County and 20 in Rooks County. Counts as high as 125 per sweep on September 13 in field in Ellis County ready to be cut and 12 per plant in seedling field. (Harvey). Few found in alfalfa in Finney and Riley Counties. (DePew, Burkhardt). NEBRASKA - Heaviest in southwest; 100-275 per 10 sweeps in 3 counties. Fields south and central districts had 2-25 per 10 sweeps. (Bergman). ILLINOIS - Very light in Cass and Clay Counties. (Ill. Ins. Rpt.).

PEA APHID (*Macrosiphum pisi*) - OREGON - Populations light to moderate in Malheur, Baker and Umatilla County alfalfa. (Capizzi). NEW MEXICO - Light to moderate in alfalfa in southern area. (N. M. Coop. Rpt.). UTAH - Increasing locally on alfalfa in Box Elder County. (Knowlton). WYOMING - Averaged 12 per sweep in alfalfa in Laramie and Platte Counties. (Fullerton). NEBRASKA - Counts averaged 25-65 per 10 sweeps in southwest, with Keith County having 125 per 10 sweeps. (Bergman). WISCONSIN - Continues to increase in alfalfa in most areas. Counts averaged 30 per 10 sweeps in central area. Predators, primarily lady beetles, average 2 per 10 sweeps in most fields, however. (Wis. Coop. Sur.). ILLINOIS - Noticeably low populations for time of year in alfalfa, averaging 0-500 per 100 sweeps. (Ill. Ins. Rpt.).

AN APHID (*Myzus* sp., near *solani*) - CALIFORNIA - Spotted heavy infestations in alfalfa in Laws, Inyo County. (Cal. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Infestations very heavy in alfalfa statewide; damage from girdling heavy in all areas. (Ariz. Coop. Sur.). TEXAS - Averaged 25 per sweep in alfalfa in Burleson County. (Doering). OKLAHOMA - Medium to heavy infestations, 1.5-15 per sweep, becoming common in alfalfa in southeast and south central areas; light, 0.2 per sweep in southwest. (Okla. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - UTAH - Moderately numerous in Box Elder County alfalfa. (Knowlton). WYOMING - Adults averaged 6 per 25 sweeps in alfalfa in Laramie and Platte Counties. (Fullerton).

STINK BUGS - LOUISIANA - Heavy infestations of several species noted on soybeans in Madison, Tensas and East Carroll Parishes. (Spink).

ALFALFA CATERPILLAR (*Colias philodice eurytheme*) - COLORADO - Larvae number 0-100 per 100 sweeps in alfalfa in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.). UTAH - Larvae averaged 2 per 25 sweeps in alfalfa in Logan area. (Knowlton). NEBRASKA - Adults abundant in alfalfa in Red Willow, Hitchcock, Dawson and Buffalo Counties. (Bergman).

ALFALFA LOOPER (*Autographa californica*) - OREGON - Blacklight trap collections increased from an average of 2 per night per trap during late August to 30 per night during period September 8-15. Three traps being operated in Linn and Marion Counties. (Larson).



Meadow Spittlebug in Illinois

**MEADOW SPITTLEBUG (*Philaenus leucophthalmus*)** - ILLINOIS - Abundance survey conducted August 29-September 15. Overall population showed a continued decline from 1959 and 1958. Average number per sweep for the State was 0.80 in 1960, 1.01 in 1959 and 1.48 in 1958. Highest populations occur in the northern area (see map). (Ill. Ins. Rpt.).

**BEE T ARMYWORM (*Spodoptera exigua*)** - CALIFORNIA - Medium infestation in alfalfa in Joaquin City area, San Joaquin County. (Cal. Coop. Rpt.) TEXAS - Medium to heavy in alfalfa in Brazos River area of Burleson County. (Doering). KANSAS - Counts 3-6 per square foot in field of alfalfa in Riley County. (Burkhardt).

**WESTERN YELLOW-STRIPED ARMYWORM (*Prodenia praefica*)** - NEVADA - Moderate on alfalfa in Lovelock, Pershing County. (Martinelli, Sebbas, Snyder).

**GARDEN WEBWORM (*Loxostege similalis*)** - KANSAS - Counts 4 per square foot in field of alfalfa in Riley County (Burkhardt) and damaging seedling alfalfa in Saline County (Gates).

**BLACK CUTWORM (*Agrotis ipsilon*)** - KANSAS - Larval counts in seedling alfalfa 2-4 inches high averaged 1 per square foot in field in Riley County. (Burkhardt).

**VELVETBEAN CATERPILLAR (*Anticarsia gemmatilis*)** - SOUTH CAROLINA - Soybeans became heavily infested with this species and *Trichoplusia ni* in Barnwell County. (Nettles et al.).

**ALFALFA WEEVIL (*Hypera postica*)** - PENNSYLVANIA - Larvae of various sizes still present on alfalfa in Bedford and other southwest counties. (Udine). VIRGINIA - Adults migrating to fields by the millions on August 30 at Midlothian, Chesterfield County. (Justice, Matheny)

**MARGINED BLISTER BEETLE (*Epicauta pestifera*)** - ALABAMA - Causing light to moderate damage to soybeans in Baldwin County; considerable damage occurred in one field. (Grimes). NORTH CAROLINA - Numerous in a lawn in New Hanover County. (Howell, Farrier).

**MEXICAN BEAN BEETLE (*Epilachna varivestis*)** - DELAWARE - Adults and larvae abundant in several fields of soybeans in southeastern Sussex County; causing severe defoliation. (Burbutis, Mason).

**BEAN LEAF BEETLE (*Ceratomyza trifurcata*)** - LOUISIANA - Caused considerable damage to soybeans in Madison, Tensas and East Carroll Parishes. (Spink).

FRUIT INSECTS

CODLING MOTH (*Carpocapsa pomonella*) - OREGON - Activity increased during September in Willamette Valley due to warm weather. Controls recommended to prevent late-season larval entries. (Jones). OHIO - Last second-brood adults emerged August 28 in Wooster area, except one straggler on September 5. Catch of second-brood larvae under bands lighter than normal. (Cutright, Sept. 9).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - OHIO - First third-brood larval feeding noted September 7 in Wooster area. (Cutright).

APPLE MAGGOT (*Rhagoletis pomonella*) - OHIO - Second-brood adults emerging from cages in Lorain County, August 31. (Still). All adults emerged from seeded cages in Wooster area by August 18, except one on August 24; adults still being taken in traps, September 3. Catches relatively light since August 16. (Cutright).

ITALIAN PEAR SCALE (*Epidiaspis piricola*) - CALIFORNIA - Heavy on pear trees in a nursery property in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (*Panonychus ulmi*) - OHIO - Severe late injury occurred August 20 to September 7 in several orchards in Wooster area; all orchards had excellent control to mid-August. (Cutright, Sept. 9).

PLUM CURCULIO (*Conotrachelus nenuphar*) - OHIO - Unusual amount of fall feeding noted in orchard in Wooster area. (Cutright, Sept. 9).

DUSKY SAP BEETLE (*Carpophilus lugubris*) - CALIFORNIA - Medium adult infestation in peach culls in Marysville, Yuba County; first record of this species in State. Det. by L. R. Gillogly. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (*Rhagoletis completa*) - CALIFORNIA - Medium in peach fruits in Arlington, Riverside County, and heavy in traps in Delhi area, Merced County. (Cal. Coop. Rpt.).

WESTERN CHERRY FRUIT FLY (*Rhagoletis cingulata indifferens*) - CALIFORNIA - Single adult taken in Frick trap in bitter cherry tree at Crescent City; first record for Del Norte County. (Cal. Coop. Rpt.).

FILBERTWORM (*Melissopus latiferreanus*) - CALIFORNIA - Medium in nectarine fruit in Hughson, Stanislaus County. (Cal. Coop. Rpt.).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - New generation has developed; defoliation of persimmon and pecan trees increasing in Mobile County. Same situation exists in Lee, Covington, Houston, Baldwin and Escambia Counties. (Seibels, Grimes; Sept. 12). ARIZONA - Heavy populations infesting apple trees in Lakeside area, Navajo County. (Ariz. Coop. Sur.).

SHOT-HOLE BORER (*Scolytus rugulosus*) - ALABAMA - Causing considerable damage to pecans in Fowl River area of Mobile County. Damage probably occurred during early summer, resulting in dying of trees at present time. (Seibels, Sept. 12). CALIFORNIA - Medium in loquat trees in Concord, Contra Costa County. (Cal. Coop. Rpt.).

BLACK PECAN APHID (*Melanocallis caryaefoliae*) - LOUISIANA - Heavy infestation noted in a Caddo Parish pecan orchard. (Pierce).

A LEAF MINER - LOUISIANA - Heavy outbreak of an undetermined species noted in pecan groves in Caddo Parish. (Pierce).

COTTONY MAPLE SCALE (*Pulvinaria innumerabilis*) - CALIFORNIA - Heavy on grapes in Gridley, Butte County. (Cal. Coop. Rpt.).

Citrus Insect Situation in Florida - End of August - PURPLE SCALE (*Lepidosaphes beckii*) activity will remain in very low range during next 2 months. All districts have only light infestations at present. Although FLORIDA RED SCALE (*Chrysomphalus aonidium*) activity dropped, it is expected to be in high range during September due to increased hatching. Populations unusually high for this time of year. Activity highest in Bartow, upper east coast, Indian River and Orlando districts. CITRUS RUST MITE (*Panonychus citri*) activity presently in low range; little change expected during next month. Moderate to heavy infestations in about 10 percent of groves in scattered locations. Highest activity only in Gainesville district. CITRUS RUST MITE (*Phyllocoptruta oleivora*) activity and populations about average for time of year. Although statewide population not expected to change greatly during September, individual groves may show marked increase or decrease. In many cases, changes will be associated with effectiveness of controls made within past 2 months. High activity now occurs in Bartow, Ridge, upper east coast, Orlando and west coast districts. CHAFF SCALE (*Parlatoria pergandii*), abnormally abundant earlier in the year, still above average population level. Although present in 41 percent of groves, most infestations light. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

#### TRUCK CROP INSECTS

TOMATO FRUITWORM (*Heliothis zea*) - COLORADO - Egg counts averaged 13.4 per 100 leaves on tomatoes in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Colo. Ins. Sur.).

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - INDIANA - Approximately 25 percent of peppers received at a Marshall County cannery infested. (Gould).

PARSLEYWORM (*Papilio polyxenes asterius*) - NORTH CAROLINA - Larvae feeding on parsley in Forsyth County. (Wright, Farrier).

A NOCTUID (*Proxenus mindae*) - CALIFORNIA - Heavy and damaging undersides of honeydew melons in Gustine area, Merced County, and Crows Landing, Stanislaus County. (Cal. Coop. Rpt.).

DARKLING BEETLES (*Blapstinus* spp.) - ARIZONA - Heavy and damaging young sugar beets along edges of few fields in central part of State. (Ariz. Coop. Sur.).

A WEEVIL (*Brachyrhinus cribricollis*) - CALIFORNIA - Medium and damaging carrot plantings in Lompoc, Santa Barbara County. (Cal. Coop. Rpt.).

BANDED CUCUMBER BEETLE (*Diabrotica balteata*) - LOUISIANA - Medium to heavy adult infestations continue on sweetpotatoes in St. Landry Parish. (Spink).

BEEF LEAFHOPPER (*Circulifer tenellus*) - ILLINOIS - Present on horseradish in East St. Louis. Averaged 2.5 per 100 sweeps in field showing "brittleroot" infected plants; none in other fields. (Ill. Ins. Rpt.).

SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) - COLORADO - Total of 335 trapped in Otero County, 0-39 at other trap sites in State. (Colo. Ins. Sur.).

A MEALYBUG (*Phenacoccus solani*) - CALIFORNIA - Heavy on tomato plantings in Thornton and heavy on Knot grass (*Paspalum distichum*) in tomato fields in Lodi area, San Joaquin County. (Cal. Coop. Rpt.).

IRIS WHITEFLY (*Aleyrodes spiraeoides*) - CALIFORNIA - Heavy on tomato in Ponto area, San Diego County. (Cal. Coop. Rpt.).

A LEAF MINER (*Liriomyza munda*) - CALIFORNIA - Medium populations, probably this species, developing in tomato plantings in Esparto area, Yolo County. (Cal. Coop. Rpt.).



### COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - OKLAHOMA - Infestations common over State, with infestation counts 4-90 percent. Heaviest counts in southeast, with south central and southwest areas having somewhat lower numbers in that order. (Okla. Coop. Sur.). SOUTH CAROLINA - Increased in Greenville County; migrating in Kershaw County; and extremely bad in York County. (Nettles et al.).

BOLLWORMS (*Heliothis* spp., et al.) - ARIZONA - Infestations continue to damage some cotton statewide; particularly in Pinal County where some fields heavily infested. (Ariz. Coop. Sur.). NEW MEXICO - Occasional infestation of economic importance still being found in Eddy and Chaves Counties. (N. M. Coop. Rpt.). OKLAHOMA - Common in all cotton-growing areas of State, with only localized areas noting heavy infestations (15-20 percent). Highest counts generally in eastern areas and gradually declined toward the west, with some slight exceptions. (Okla. Coop. Sur.). SOUTH CAROLINA - Extremely bad in York County. (Nettles et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - NEW MEXICO - Apparently no longer a threat in Chaves and Eddy Counties. Large percentage of larvae diseased. (N. M. Coop. Rpt.). OKLAHOMA - Localized infestations noted in cotton in Bryan, Caddo and Tillman Counties. (Okla. Coop. Sur.). ARKANSAS - Continues very numerous in most cotton; all stages of pest present. (Ark. Ins. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - OKLAHOMA - Infestations increasing in some fields of irrigated cotton in localized areas of Grady County. (Okla. Coop. Sur.). ARKANSAS - Quite common in southwest areas. (Ark. Ins. Sur.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Populations continue to increase in cotton in central and southwestern areas. (Ariz. Coop. Sur.).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEVADA - Light trap surveys negative to date. (Parker).

BEEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Medium infestations in some cotton in Hidden Valley, Pinal County. (Ariz. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - ARIZONA - Light to medium infestations present in some cotton in central and eastern areas. Honeydew deposits becoming noticeable in some cases. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Nymphs still relatively abundant in terminals of cotton in Luna County. (N. M. Coop. Rpt.).

SPIDER MITES (*Tetranychus* spp.) - NEW MEXICO - Occasional spotty infestation in cotton in southern area. (N. M. Coop. Rpt.).

### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (*Rhyacionia frustrana*) - ALABAMA - Heavy infestations on young pines in Mobile County. (Seibels). NORTH CAROLINA - Heavy in young pines locally in Hoke County. (Chadwick, Farrier).

A PINE TIP MOTH - TEXAS - Heavy infestation of an undetermined species on 50 acres of a 2-year-old loblolly pine plantation in Houston County. (Young).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - Spread very little during August; no new infestations observed on detection flight made August 29. Control lacking on 48 spots, of which 3 have over 100 brood trees. Some rain on each of 22 days in August hampered control activity. (Young).

TURPENTINE BEETLES - TEXAS - Undetermined species being controlled on 150 acres in eastern Angelina County. (Young).

A WOOLLY PINE NEEDLE APHID (Schizolachnus pini-radiatae) - OKLAHOMA - Light to medium infestations, probably this species, on seedlings and limited number of older shortleaf pines in Pushmataha and McCurtain Counties. (Okla. Coop. Sur.).

A WOOLLY PINE SCALE (Pseudophilippia quaintanclii) - ALABAMA - Heavily infesting young pines in Mobile County. (Seibels).

PINE SAWFLIES - WISCONSIN - Diprion similis seriously defoliated several white pines west of Wausau, Marathon County, September 9. This particular infestation was so heavy, larvae covered trunk of 1 tree to within 3 feet of the ground. Needles being webbed prior to pupation. (Wis. Coop. Sur.). INDIANA - Neodiprion lecontei infesting pine plantations in Lawrence and Dubois Counties. (Schuder).

FALL WEBWORM (Hyphantria cunea) - PENNSYLVANIA - Moderately abundant on various trees in southwest portion of State. (Udine). NORTH CAROLINA - Attacking several species of deciduous trees in Forsyth County. (Wright). ALABAMA - Activity increasing in southeastern portion of State. (Banks). OKLAHOMA - Heavy and common throughout east central and southeast areas of State on native persimmon; also infesting pecan, hickory and oak. Populations considerably heavier in these areas than noted in 1959. (Okla. Coop. Sur.).

BIRCH SKELETONIZER (Bucculatrix canadensisella) - WISCONSIN - Heavily infesting white birch in Jackson and Monroe Counties. (Wis. Coop. Sur.).

BASSWOOD LEAF ROLLER (Pantographa limata) - WISCONSIN - Very heavy on basswood in Lake County. (Wis. Coop. Sur.).

LILAC BORER (Podosesia syringae syringae) - MARYLAND - Injury to ash trees noted at Hagerstown, Washington County, on September 8. (U. Md., Ent. Dept.).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - WISCONSIN - Larvae feeding heavily on elms in Waupaca County. (Wis. Coop. Sur.).

RED-HUMPED OAKWORM (Symmerista albifrons) - WISCONSIN - Larvae feeding heavily on burr oaks in Waushara County. (Wis. Coop. Sur.).

ASIATIC OAK WEEVIL (Cyrtepidostomus castaneus) - PENNSYLVANIA - Caused heavy defoliation of forest trees in some localities; complete to partial defoliation of seedlings. (Negley, Slesman). VIRGINIA - A general nuisance in several areas of State; being attracted to lights. (Rowell, Smith).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Continues to damage elm foliage over a wide area, including Alfalfa, Cleveland, Garfield, Haskell, Hughes, Johnston, Marshall, Murray, Nowata and Pushmataha Counties. (Okla. Coop. Sur.).

LARGER ELM LEAF BEETLE (Monocesta coryli) - NORTH CAROLINA - Defoliating elms in Rowan County. (Corriher, Farrier).

A MEALYBUG (Phenacoccus acericola) - INDIANA - Infesting ornamental sugar maples at Anderson, Madison County. (Schuder).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Heavy populations developed on ash trees in Lemon Grove, San Diego County. (Cal. Coop. Rpt.).

DUSKY BIRCH SAWFLY (Croesus latitarsus) - DELAWARE - Mature larvae feeding on black birch in Glasgow area, New Castle County. (Burbutis, Mason).

WALKINGSTICK (Diapheromera femorata) - WISCONSIN - Very heavy south of Plainfield, Waushara County; completely defoliated about 2½ acres of black locust and feeding heavily on white and red oaks. Some feeding occurring on first 4 or 5 rows of snap beans bordering this infestation. (Wis. Coop. Sur.).

AN EARWIG - PENNSYLVANIA - An undetermined species (not European earwig) very abundant under bark of maple trees in Lackawanna County. (Gesell).

MIMOSA WEBWORM (Homadaula albizziae) - PENNSYLVANIA - Very severe on honeylocust in southwestern area of State. (Udine). INDIANA - Entirely defoliated honeylocust trees in central and southern portions of State. (Schuder). VIRGINIA - Disappearing in Pittsylvania County where previously common on mimosa. (Blair, Rowell).

PUSS CATERPILLAR (Megalopyge opercularis) - NORTH CAROLINA - Large numbers feeding on crapemyrtle in Columbus County and on redbud tree in Wake County. (Jones).

NOTODONTIDS (Datana spp.) - WISCONSIN - D. perspicua feeding heavily on sumac in Portage County. (Wis. Coop. Sur.). INDIANA - D. integerrima defoliating walnuts throughout central section. (Schuder). MARYLAND - Datana sp. destructive to deciduous azalea foliage in Princess Anne, Somerset County. (U. Md., Ent. Dept.). NORTH CAROLINA - Larvae of D. major injuring azaleas in Montgomery County. (Garris, Farrier).

CATALPA SPHINX (Ceratonia catalpae) - OKLAHOMA - Defoliating catalpa trees in several areas of McCurtain County. (Okla. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - NORTH CAROLINA - Severe infestation locally on arborvitae in Forsyth County; heavily parasitized by an ichneumonid. (Wright, Farrier).

A REDBUD LEAF ROLLER (Fascista cercerisella) - KANSAS - Present generation up to one-half grown in Riley County. (Parker).

GIANT HORNET (Vespa crabro germana) - NORTH CAROLINA - Debarking lilac bush in Forsyth County and active in Cherokee County. (Jones, Stephen).

COCCIDS - PENNSYLVANIA - Lecanium fletcheri abundant on yew in Allegheny County. (Udine). NORTH CAROLINA - Ceroplastes sp., near ceriferus, infesting landscape plants in Robeson County. (Jones, Farrier). CALIFORNIA - Medium populations of Aspidiotus osborni on dogwood in the Redwood Valley, Mendocino County. Chionaspis corni heavy on Cornus sp. 3 miles west of Woodfords, Alpine County. Heavy populations of Toumeyella liriodendri on tuliptrees in city plantings in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Phyllaphis fagi heavy on Fagus sp. in Eureka, Humboldt County, and Drepanaphis acerifolii heavy on maples in a nursery in El Cerrito, Contra Costa County. (Cal. Coop. Rpt.). OKLAHOMA - Several species continued common on a wide variety of ornamental shrubs and trees over most of the State. (Okla. Coop. Sur.). DELAWARE - Lachnus salignus extremely abundant statewide, especially in Sussex County. This is the undetermined species reported in CEIR 10(37):857. (Burbutis, Mason).

A DOGWOOD SAWFLY (Macremphytus varianus) - PENNSYLVANIA - Occurring on numerous plants in Somerset County and in other spots in southwest area; probably migrating from dogwood to pupate. (Udine).

CRICKETS - ALABAMA - Undetermined species continues to cause heavy damage to camellia in Mobile County. (Seibels).

AN ERIOPHYID MITE (Aceria nimius) - FLORIDA - Collected on Diospyros sp. at Tampa, Hillsborough County, April 25, by C. W. Hale. Det. by C. C. Hall. This species was recently described by C. C. Hall from Alabama on ash. This collection constitutes a new host and locality record. (Fla. Coop. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (*Callitroga hominivorax*) - OKLAHOMA - Beginning to appear in a few herds of cattle in widely scattered areas of State. (Okla. Coop. Sur.).  
 LOUISIANA - Authenticated outbreaks reported in 4 herds in Franklin Parish and in 4 herds in Richland Parish during first part of September. (Spink).

Current Screw-worm Situation Report - Week Ending September 18, 1960

State	Cumulative Totals - 1960		Counties or Parishes
	Cases	Premises	
Alabama	1	1	Geneva
Arkansas	14	13	Chicot Ashley
Louisiana	19	18	Richland Franklin De Soto Madison Red River
Mississippi	6	4	Issaquena Washington
Totals	40	36	10

Date First Case Found This Year:

Alabama - 8-30-60, Arkansas - 7-28-60, Louisiana - 7-12-60, Mississippi - 7-29-60

Screw-worm Cases Intercepted at Inspection Stations:

1958 - 8, 1959 - 6, 1960 - 20 to date.

(Animal Dis. Erad. Div.).

\*Dates recorded incorrectly in CEIR 10(38):879 as 3-30-60 and 7-26-60, respectively.

FACE FLY (*Musca autumnalis*) - PENNSYLVANIA - Very heavy on cattle in some areas of western section and of considerable concern. No control treatments successful. Counts 35-50 on face and hundreds on body. (Udine). INDIANA - Continues to invade farm homes in localized areas in Warren, Tippecanoe and White Counties; hundreds present in infested buildings. (Matthew). ILLINOIS - Collections from faces of cattle in Wabash, Edward and Wayne Counties negative. (Ill. Ins. Rpt.). NEBRASKA - None found in sandhills area of State. Undetermined flies found on faces of cattle in York County. (Roselle).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Populations increased slightly over previous week in Stillwater area and continued heavy in east central and south-east areas. (Okla. Coop. Sur.).

HORN FLY (*Siphona irritans*) - OKLAHOMA - Populations decreasing on range cattle in Payne-Noble County area. Counts on September 6-7 in herd in Pushmataha County averaged 450 per cow; and in a herd in Johnston County 2,500 per animal on bulls, 2,000 per animal on cows and 500 per animal on calves. Causing annoyance to cattle in northeast, east central, southeast and south central areas. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Populations of several species decreased 50 percent in Payne-Noble County area. Infestations continued to annoy livestock throughout eastern area. Counts averaged approximately 1 per animal on cattle in Pushmataha County. (Okla. Coop. Sur.).

A HORSE BOT FLY (Gasterophilus sp.) - OKLAHOMA - Adults active and laying eggs on horses in east central area; counts averaged 1 adult per horse in pastures in area. (Okla. Coop. Sur.).

MOSQUITOES - TEXAS - Trap counts of Aedes sollicitans during August at Port Arthur no higher than in July; however, large catches made in Beaumont traps probably due to migratory or searching flight habits of the species. Large number of bites reported at Beaumont. A. taeniorhynchus less numerous in Port Arthur trap; large catches made in mid-Jefferson County and at Beaumont. Psorophora confinnis decreased throughout Jefferson County and P. ciliata appeared in small numbers in middle of county and Beaumont. Anopheles quadrimaculatus decreased in all traps in county except in south Beaumont. Large numbers of unidentifiable mosquitoes collected due to heavy rains. Landing rates high throughout August; however, mosquitoes not seriously annoying until about August 15 when enormous flight of A. sollicitans invaded area. Invasion was about 2 days moving from Port Arthur (16 miles) to Beaumont. (Jeff. Co. Mosq. Cont. Comm.). UTAH - Mosquitoes continue troublesome in several areas of Davis County; very numerous in areas of Box Elder County, largely Aedes dorsalis; and troublesome to man in parts of Logan Canyon, Cache County. (Knowlton). CALIFORNIA - Heavy populations of mosquitoes, probably Psorophora sp., biting people and invading homes in Hemet, Riverside County. (Cal. Coop. Rpt.).

BEDBUG (Cimex lectularius) - SOUTH DAKOTA - Specimens identified from Rapid City, Pennington County. (Mast). UTAH - Infesting a home at Provo. (Davis, Barlow).

A BLOODSUCKING CONENOSE (Triatoma sp.) - CALIFORNIA - Nymphs invading a home in Clearlake Oaks, Lake County. (Cal. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - NORTH CAROLINA - Stung child in Wake County and received for identification from Cumberland County (Smith), and stung 2 children in Wayne County (Jones).

FLEAS - OKLAHOMA - Ctenocephalides felis causing annoyance in some homes, kennels and other areas frequented by pets in Payne County. (Okla. Coop. Sur.).

PENNSYLVANIA - C. felis and C. canis much more abundant than usual generally and troublesome to man. (Pepper).

CHIGGER (Eutrombicula alfreddugesi) - PENNSYLVANIA - Much more abundant than usual generally and troublesome to man. (Pepper).

VESPID (Vespa spp.) - RHODE ISLAND - Numerous complaints from schools, where children have been stung during play periods. (Hansen).

A BROWN SPIDER (Loxosceles reclusa) - NEBRASKA - Specimen identified from Richardson County; first record in the State. (Bergman).

BLACK WIDOW SPIDER (Latrodectus mactans) - NEVADA - Becoming increasingly numerous around homes in Washoe County. (Coop. Rpt.). SOUTH DAKOTA - Specimen identified from Hughes County. (Mast). MARYLAND - Female found in old house on Eastern Shore, September 5. (U. Md., Ent. Dept.).

SCORPIONS - NEVADA - Numerous calls of inquiry received in Reno area, Washoe County; apparently more prevalent than usual. (Coop. Rpt.).

### STORED-PRODUCT INSECTS

DRUG-STORE BEETLE (Stegobium paniceum) - OKLAHOMA - Infesting spices in some homes in Oklahoma City, Shawnee, Cushing and Stillwater. (Okla. Coop. Sur.).

WEEVILS (Sitophilus spp.) - OKLAHOMA - Common in farm-stored grain throughout Love County. (Okla. Coop. Sur.).

### BENEFICIAL INSECTS

LADY BEETLES - NEBRASKA - Hippodamia spp. counts averaged 62 immature forms per 10 sweeps in Dundy County. (Bergman). WYOMING - Adults of Hippodamia spp. averaged 6 per corn plant in 12 fields in Platte County. (Fullerton). CALIFORNIA - Heavy populations of Ceratomegilla vittigera present in alfalfa in Oklahoma Flats and Dorris areas, Siskiyou County. (Cal. Coop. Rpt.).

NABIDS (Nabis spp.) - WYOMING - Averaged 2 adults per corn plant in 12 Platte County fields. (Fullerton). NEBRASKA - Averaged 5-15 per 10 sweeps in southwest area. (Bergman).

FLOWER BUGS (Orius spp.) - WYOMING - Adults averaged 8 per plant in 12 fields of corn in Platte County. (Fullerton).

A SCOLIID (Scolia dubia) - PENNSYLVANIA - Numerous complaints received from southeast area. (Menuson). VIRGINIA - Prevalent in several areas of the State. (Rowell).

### MISCELLANEOUS INSECTS

ARCTIIDS - WISCONSIN - Diacrisia virginica, Estigmene acrea, Isia isabella and other species extremely plentiful; feeding on various crops as well as usual weed hosts throughout much of State. (Wis. Coop. Sur.).

WHITE-LINED SPHINX (Celerio lineata) - ARIZONA - Heavy larval migrations observed along roads in northern Maricopa and Yavapai Counties. (Ariz. Coop. Sur.). WISCONSIN - Adults being taken in blacklight detectors much later in season than in previous years. (Wis. Coop. Sur.).

NOCTUIDS - WYOMING - Moths of unspecified species making second invasion of year in Cheyenne; prevalent in lawns and basements of homes. (Fullerton).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - CALIFORNIA - Medium on Russian-thistle in Corona, Riverside County. (Cal. Coop. Rpt.).

CRICKETS - SOUTH DAKOTA - Acheta sp. continues a serious pest in homes in east central area of State. (Mast). MINNESOTA - Numerous reports of high populations of field crickets throughout State; extremely high numbers noted in west central district. (Flaskerd, Sept. 9).

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla) - PENNSYLVANIA - Being reported more often than usual in northeastern and central areas. (Gesell).

CICADA KILLER (Sphecius speciosus) - PENNSYLVANIA - Numerous reports of this species received during August and early September from southwest area of State. (Keeler, Udine).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrotis ippsilon	Prod. ornith.	Protoparce sexta	Protoparce quin.	Hel. zea	Perid. saucia
<b>ALABAMA</b>								
Auburn 9/13		4	2	7	1	4	21	
<b>ARKANSAS</b>								
*Morrilton 9/8-14	10		10				299	
Kelso 9/8-14	30						41	
<b>CALIFORNIA</b>								
Davis 9/7-13	483		32		77		105	21
<b>DELAWARE</b>								
Bridgeville 9/1-13					203			
<b>FLORIDA</b>								
Gainesville 8/31	4						17	
Monticello 8/30					2		6	
Quincy 8/29					6		11	
<b>INDIANA (Counties)</b>								
Lawrence 9/6-9	5		1	4	15	3	13	1
Tippecanoe 9/8-14	11			3	1	1	56	3
Vanderburgh 9/7-12	11			9	2		64	
<b>ILLINOIS</b>								
Urbana 9/9-15	38	23	14	11	5		77	29
<b>KANSAS</b>								
Garden City 9/5-9,12	185	10	22			3	51	
Hays 9/9-14	26	1	3				14	
Manhattan 9/9-15	17	25	2		1		166	
Wathena 9/7-12	60		4		6	6	94	
<b>LOUISIANA</b>								
Baton Rouge 9/9-15	661	881	48	491			144	2
<b>MARYLAND</b>								
Fairland 9/7-14	37	15	9		5	8	24	16
<b>MISSISSIPPI</b>								
*Stoneville 9/9-15 (Traps not operated 9-12)	1,112	1,696	53	413	36		1,855	18
<b>NEBRASKA</b>								
Alliance 9/2-9	8		1		1	4	3	6
Bushnell 8/30-9/6	16		10		6	3	2	6
Kearney 9/7-9	3	1	3				10	2
Lincoln 9/9-15	23		2				17	1
North Platte 9/7-14	222	1	20		9	2	26	14
Scotts Bluff 9/1-7	28		4			3	7	21
<b>SOUTH CAROLINA</b>								
Charleston 9/12-18	110	132	35	48	177	1	287	
Clemson 9/10-16	108	71	26	216	7	2	90	4
<b>TENNESSEE (Counties)</b>								
Maury 9/6-12	18	10	4	6	10	5	42	8
Robertson 9/6-12	44	4	28	80	11	9	184	4
Cumberland 9/6-12	44	4	2	12	56	12	120	4
Greene 9/6-12	38	8	6	18	110	20	60	10
Johnson 9/6-12	68	4	14	96	1		136	8

\* Two traps - Morrilton, Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Agrotis ippsilon	Prod. ornith.	Protoparce sexta quin.	Hel. Perid. zea saucia
<b>TEXAS</b>						
Waco 9/10-16	1,258		3	274		1,062 98
<b>WISCONSIN</b>						
Middleton 9/6-12	90	9	8			3 13
Arlington 9/6-12	59					3
*Theresa 9/6-12	87					15
La Crosse 9/6-12	1,328					
Green Bay 9/6-12	20		1			1
Platteville 9/6-12	160	34	18			12 1

Additional Collections

CALIFORNIA - (Davis - 9/7-13); Prodenia praefica -720; Spodoptera exigua - 9,283

\* Three traps - Theresa.

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CORRECTIONS

CEIR 10(37) : 848 - CORN LEAF APHID (Rhopalosiphum maidis)- NEVADA - Bermuda grass should read Sudan grass.

CEIR 10(37) : 863, 866 - Losses and Production Costs Attributable to Insects and Related Arthropods - Column D - delete ton per acre.

CEIR 10(38) : 879 - SCREW-WORM (Callitroga hominivorax) - Date for Alabama in note at bottom of chart should read 8-30-60. Arkansas date should read 7-28-60.

ADDITIONAL NOTES

IDAHO - Populations of SPIDER MITES (Tetranychus spp.) extremely abundant in 30-acre red clover seed field near Wilder, Canyon County. Greater numbers of ARMY CUTWORM (Chorizagrotis auxillaris) emerging from summer aestivation than in past few years. Emergence anticipated in view of extremely high adult numbers found this spring following severe larval infestation on approximately 100,000 acres of rangeland in southwestern and south central areas. PEA APHID (Macrosiphum pisi) continues general in alfalfa in Bingham County, with extremely high numbers in many fields. GREEN PEACH APHID (Myzus persicae) heavily infested commercial field of potatoes of approximately 80 acres in Aberdeen area. Unidentified SPRINGTAILS extremely abundant around some homes at Payette and causing concern. Few reports received of light CORN EARWORM (Heliothis zea) infestations on sweet corn in Caldwell area. (Gittins, Waters, Scott, Bishop, Matsen, Bechtolt).

MINNESOTA - Grasshopper survey in Ottertail, Wilkin and Clay Counties showed marked decrease in Melanoplus differentialis, due to normal mortality. M. differentialis and M. femur-rubrum remain active in these counties. Soybeans adjacent to soil bank land in Wilkin County severely defoliated; very few grasshopper predators present in this area. Light fungus disease noted in Ottertail County, affecting mainly M. differentialis. ZIMMERMAN PINE MOTH (Diorcyctria zimmermani) infesting Austrian pine and seriously damaging tips of same host in nursery near Minneapolis. This is first occurrence noted in area, although previously reported in State. Undetermined ERIOPHYID MITES damaging Black Hills spruce and terminal growth of ash and locust in Minneapolis-St. Paul area nurseries. (Flaskerd).



LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS  
ATTACKING APPLES IN 1959 IN  
MARYLAND AND MICHIGAN

A GEOGRAPHICAL UNIT	B ACRES PLANTED		C FROM CROP OR LIVESTOCK REPORTING SERVICE		D AV YIELD	E PEST OR PEST COMPLEX (see Legend)	F ACRES NEEDING CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I REDUCTION YIELD/A FROM POTENTIAL	J COST OF PESTICIDE S/A	K APP-LICATION S/A	L TOTAL PRACTICE S/A	M TOTAL TREATMENT \$/A	N ESTIMATED GALS OR TONS TREATED	O ESTIMATED GALS OR TONS TREATMENT \$/A	P YIELD LOSS \$/ACRE CONTROL COST \$/ACRE
	M	M	TREATED	UNTREATED														
MARYLAND	----	1,400	---	A, Am, C, Cm, Lr, M	---	----	---	---	0.11 /bu.	0.03 /bu.	0.14 /bu.	196	--	256				
MICHIGAN	67.0	67.0	182	A, Am, C, Cm, M, Rb1	67.0	182	91	50	25.48 /bu.	27.30 /bu.	52.78 /bu.	3,536.26	82	4,136				

FOOTNOTE

1/ Bushels in Maryland; acres in Michigan.

LEGEND

A = Aphids

Am = Apple maggot (*Rhagoletis pomonella*)

C = Curculio

Cm = Codling moth (*Carpocapsa pomonella*)

Lr = Leaf roller

M = Mites

Rb1 = Red-banded leaf roller (*Argyrotaenia velutinana*)

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING SEVERAL CROPS IN 1959 IN

MICHIGAN

A CROP	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M ACRES PLANTED	D M AV YIELD	E PEST OR PEST COMPLEX (see legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS. TREATED	I YIELD/A UNTREATED	J % REDUCTION YIELD/A FROM POTENTIAL	K COST OF CONTROL PRACTICE PER ACRE \$ / A	L APP- LICA- TION \$ / A	M TOTAL \$ / A	N TOTAL COST TREAT- ALL/A TREATED \$ / A	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$ / A	P YIELD LOSS \$ PLUS CONTROL COST \$
	M ACRES HAR- VESTED	M ACRES NEEDING CONTROL PRACTICE														
<u>CHERRIES</u>	39.7	36.0	2.5 Tons	2.5 Tons	A, Bm, Ca, Cur, M	39.7	39.7	2.5 Tons	2	20	15	10	25	992.5	52.50	1,685
<u>PEACHES</u>	21.0	18.0	148 bu.	148 bu.	Cur, Lr, Ofm, Pcb, S	21.0	21.0	148	100	33.3	20	20	40	840	296.00	1,286
<u>PEARS</u>	9.2	6.0	-----	-----	Cod, Lr, Pp	6.0	6.0	120	100	16	15	15	30	180	4.80	208.8
<u>GRAPES</u>	2.2	2.1	2.5	2.5	Lh, Lr	2.1	2.1	2.5	1.5	40	12.5	15.00	27.50	60.5	87.50	84.75
<u>STRAW- BERRIES</u>	11.0	10.0	3,300 lbs.	3,300 lbs.	Sb, Slr	11.0	10.0	3,300 lbs.	825 lbs.	75	8.00	8.00	16.00	160	371.25	704.5
<u>ONIONS</u>	7.8	7.8	315 cwt.	315 cwt.	Cu, O	7.8	7.5	378	232	20	9.00	12.00	21.00	157.5	252.00	637
<u>CELERY*</u>	3.8	3.8	300 cwt.	300 cwt.	Ca, Cu, Lh, Tpb	3.8	3.5	330	270	10	5	7.00	12.00	42	120.00	294

\*Aster  
yellows  
not  
serious  
in 1959

Table continued on page

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CUCUMBERS	29.5	25	73 cwt.	A, Cuc, Sm	29.5	20	84	62	15	4.00	6.00	10.00	200	88.00	784
ASPARAGUS	11.2	11.2	15 cwt.	Ab	11.2	10.0	16 cwt.	15 cwt.	6	4.00	4.00	8.00	80	13.00	138.5
SNAP BEANS	10.0	10.0	33 cwt.	Lh, M, Mbb	6.0	5.0	41 cwt.	25 cwt.	25	3.00	6.00	9.00	45	40.00	127.5
CABBAGE & CAULI- FLOWER	5.9	5.9	135 cwt.	Caas, Cam, Caw	5.9	5.0	155 cwt.	115 cwt.	15	5.00	7.00	12.00	60	90.00	240
CANTAL- LOUPE	2.5	2.5	90 cwt.	A, Cu, Cuc, Sm	2.5	2.2	112.5	67.5	25	5.00	7.00	12.00	26.4	135.00	145.2

LEGEND

- A = Aphids  
 Ab = Asparagus beetles (Crioceris spp.)  
 Bm = Bud moth  
 Ca = Caterpillars  
 Caa = Cabbage aphids  
 Cam = Cabbage maggot (Hylemya brassicae)  
 Cas = Casebearer  
 Caw = Cabbageworms  
 Cod = Codling moth (Carpocapsa pomonella)  
 Cu = Cutworms  
 Cuc = Cucumber beetles  
 Cur = Curculio  
 Lh = Leafhoppers
- Ir = Leaf rollers  
 M = Maggots  
 Mbb = Mexican bean beetle (Epilachma varivestis)  
 O = Onion maggot (Hylemya antiqua)  
 Ofm = Oriental fruit moth (Grapholitha molesta)  
 Pp = Pear psylla (Psylla pyricola)  
 Ptb = Peach tree borer (Saminioides exitiosa)  
 S = Scales  
 Sb = Spittlebug  
 Sir = Strawberry leaf roller (Ancylys comptana fragariae)  
 Sm = Seed-corn maggot (Hylemya ciliicrura)  
 Tpb = Tarnished plant bug (Lygus lineolaris)

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING POTATOES IN 1959 IN

MICHIGAN, NEBRASKA, AND RHODE ISLAND

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M		D AV YIELD	E PEST OR PEST COMPLEX (see Legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I % REDUCTION YIELD/A FROM UNTREATED POTENTIAL	J % YIELD/A FROM TREATED TREATMENT \$/A	K COST OF PEST-ICIDE \$/A	L APP-LICATION \$/A	M TOTAL PRACTICE \$/A	N TOTAL COST TREAT ALL/A TREATED TREATMENT \$/A	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$ PLUS CONTROL COST \$
	M ACRES PLANTED	M ACRES HARVESTED	TREATED	UNTREATED														
MICHIGAN	54	52	160 cwt.	54	54	Fb, Cpb, A, Pl, W		54	160 cwt.	170 cwt.	25	9.00	21.00	30.00	1,620	17.04	2,540	
NEBRASKA North-west	17.4	17.4	308.3 bu.	12	7	Cpb, G, GT, P, Fb, W		7	320 bu.	300 bu.	0.15	2.20	1.40	3.60	25.2	32.00	192	
RHODE ISLAND	4.5	4.5	350 bu.	4.5	4.5	All potato insects		4.5	350 bu.	---	----	3.28	4.73	8.01	36.04	140.00	36.04 1/2	

FOOTNOTE:

1/ No yield loss recorded based on experimental data.

LEGEND

A = Aphids

Cpb = Colorado potato beetle (*Leptinotarsa decemlineata*)

Fb = Flea beetles

G = Grasshoppers

Gr = Grubs

Pl = Potato leafhopper (*Empoasca fabae*)

P = Psyllids

W = Wireworms

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING TOMATOES IN 1959 IN

MICHIGAN AND NEW MEXICO

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M ACRES HARVESTED	D AV YIELD	E PEST OR PEST COMPLEX (see legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I REDUCTION YIELD/A TREATED	J PEST LIFE CYCLE	K COST OF CONTROL PRACTICE \$/A	L TOTAL TREAT ALL/A TREATED	M ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	N YIELD LOSS PLUS CONTROL COST \$
	M ACRES PLANTED	M ACRES TREATED						TREATED	UNTREATED						
MICHIGAN															
Fresh tomatoes	8.0	7.0	7.0	90 cwt.	Th, A, Fb, Cu	8.0	7.5	108	72	20	5.00	6.00	82.5	66.00	405
Processed tomatoes	7.3	5.0	5.0	240 cwt.	Th, A, Fb, Cu	7.3	5.0	288	192	20	5.00	6.00	55	96.00	247
NEW MEXICO	---	2.1	2.1	10 tons/acre	Tb, Tf, Trm, Lh	2.1	2	13 tons	4 tons	69	20	15	70	315	367

LEGEND

A = Aphids

Cu = Cutworms

Fb = Flea beetles

Lh = Leafhoppers

Tf = Tomato fruitworm (*Heliothis zea*)

Th = Tomato hornworm (*Protoparce quinquemaculata*)

Trm = Tomato russet mite (*Aculus lycopersici*)

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS  
 ATTACKING SUGAR BEETS IN 1959 IN  
 MICHIGAN AND NEBRASKA

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M		D YIELD TONS PER ACRE	E PEST OR PEST COMPLEX (see legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I TONS TREATED	J % REDUCTION YIELD/A FROM POTENTIAL	K PEST-ICIDE S/A	L APP-LICATION S/A	M TOTAL CONTROL PRACTICE S/A	N TOTAL TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT S/A	P YIELD LOSS PLUS CONTROL COST \$/A
	M ACRES PLANTED	M ACRES HARVESTED	M ACRES	M AV YIELD TONS PER ACRE					TONS TREATED	TONS UNTREATED								
MICHIGAN	75	73	16	A, C, Fb, W	5	4	18.5	13.5	7	1.00	3.00	4.00	16	28.25	72			
NEBRASKA North-west	63.5	63.5	17.2	Bw, G, L	50	50	17.2	4.3	.25	2.35	1.40	3.75	187.5	154.80	223			

LEGEND

- A = Aphids
- Bw = Beet webworm (*Loxostege sticticalis*)
- C = Cutworms
- Fb = Flea beetles
- G = Grasshoppers
- L = Leafhoppers
- W = Wireworms

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING CLOVER-TIMOTHY AND TOBACCO IN 1959 IN

MARYLAND

A CROP AND GEOGRA- PHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M ACRES HAR- VESTED	D AV YIELD	E PEST OR PEST COMPLEX (see Legend)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I TREATED	J UN- TREATED	K % REDUCTION YIELD/A FROM POTENTIAL	L PEST- ICIDE \$/A	M APP- LICA- TION \$/A	N TOTAL COST TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$ PLUS CONTROL COST \$	
	M ACRES PLANTED	AV YIELD						TREATED	UN- TREATED									
CLOVER- TIMOTHY																		
State	---	216	1.50 tons/ acre	216	C1, Ms	216	50	1.73 tons/ acre	1.43 tons/ acre			10	2.00	1.00	150	9.00	1,644	
TOBACCO																		
5 Coun- ties (Anne Arundel, Baltimore, Charles, Prince- Georges, St. Marys)	---	38.0	875 lbs/ acre	38.0	A, B, Fb, H	38.0	23.0	965 lbs/ acre	765 lbs/ acre			8	3.50	1.50	115	12.00	1,915	

LEGEND

A = Aphids

B = Budworms (*Heliothis* spp.)

C1 = Clover weevils

Fb = Flea beetles

H = Hornworms (*Protoparce* spp.)

Ms = Meadow spittlebug (*Philaenus leucophthalmus*)

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING ALFALFA AND SMALL GRAIN IN 1959 IN

NEW MEXICO

A CROP	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES PLANTED	D YIELD T/AV ACRE	E PEST OR PEST COMPLEX (see legend)	F ACRES UNDER CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU. OF BALE		I REDUCTION YIELD/A FROM POTENTIAL	K COST OF PEST-EGIDE \$/A	L COST OF CONTROL PRACTICE		M TOTAL TREAT ALL/A TREATED	N ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	O YIELD LOSS, \$ PLUS CONTROL COST, \$
	ACRES	REPORTING SERVICE						TREATED	UNTREATED			APP-LICA-TION	TOTAL \$/A			
ALFALFA	---	162	3.5 tong/ acre	Pa, Saa	90	70	4	2.5	2	37.5	2.5	4.5	315	25.5	915	
SMALL GRAIN	325	250	20 bu./ acre	A, G	300	175	23 bu.	.5	.75	22	1.25	218.7	6.25	1,156		

LEGEND

A = Aphids

G = Grasshoppers

Pa = Pea aphid (*Macrosiphum pisi*)

Saa = Spotted alfalfa aphid (*Therioaphis maculata*)





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*Cooperative*

**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SOUTHWESTERN CORN BORER abundant in several New Mexico counties, and CORN EARWORM, FALL ARMYWORM and SORGHUM WEBWORM continue damaging in several areas. (pp. 915, 930). SPOTTED ALFALFA APHID found for first time at several locations in Owyhee, Canyon and Payette Counties, Idaho; building up in New Mexico, Oklahoma and Missouri; and present in most of eastern and central Nebraska. (pp. 916, 917). Damage by THREE-CORNERED ALFALFA HOPPER heavy in many Arizona alfalfa fields and increasing in southwestern Oklahoma. WESTERN YELLOW-STRIPED ARMYWORM heavy on alfalfa in San Joaquin area of California. (p. 917).

Third ORIENTAL FRUIT FLY found in California (p. 919); map (p. 920). TWIG GIRDLER damage to pecan heavier than past 2 seasons in Oklahoma; and BLACK-MARGINED APHID heavy on pecans in Okfuskee and Payne Counties, Oklahoma, and throughout Arizona. (p. 921).

CABBAGE LOOPER remains a problem on lettuce in Dona Ana County, New Mexico, and egg counts high in Arizona. (p. 921). ONION THRIPS extremely high on late onions in Marion and Benton Counties, Oregon (p. 922), and damage severe in several fields in area of Washoe County, Nevada (p. 930).

BETTER, Dendroctonus spp. and Ips spp., damaging pines in several states, and EUROPEAN PINE SHOOT MOTH infestation very heavy in northern third of Indiana. (p. 923).

Current SCREW-WORM situation report. (p. 926).

INSECT DETECTION: A spider mite, Tetranychus lobosus, reported for first time in Delaware. (p. 918). New county records reported were white-fringed beetles in Beaufort County, North Carolina, and Dyer, Lauderdale, Weakley and Fayette Counties, Tennessee (p. 916); spotted alfalfa aphid in Owyhee, Canyon and Payette Counties, Idaho (p. 916); soybean cyst nematode in Mississippi and Scott Counties, Missouri (p. 918); oriental fruit fly in Santa Barbara County, California. (p. 919); mimosa webworm in Champaign County, Illinois; Burke, Surry and Wilkes Counties, North Carolina; and in 11 new counties in New Jersey (p. 925); a mosquito (Psorophora cyaneascens) in Calvert County, Maryland (p. 926); face fly in Watauga and Avery Counties, North Carolina (p. 927); and Japanese beetle in Anderson and McMinn Counties, Tennessee (p. 928).

CORRECTIONS (p. 928).

ADDITIONAL NOTES (p. 930).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS. (pp. 931-938). 1959 COLORADO INSECT LOSS ESTIMATES. (p. 939).

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Reports in this issue are for week ending September 23, unless otherwise indicated.

WEATHER OF THE WEEK ENDING SEPTEMBER 26

Temperatures for the week averaged unseasonably high in the lower Great Lakes region and lower Mississippi Valley, as much as 6° locally, and near seasonable levels elsewhere. In the Far West, the week generally was cooler than the previous week, by as much as 10° in some areas, while the reverse was true east of the Mississippi where large areas were 9° to 12° warmer than the previous week.

Early in the period, the northern Great Plains experienced a late season heat wave as maximum temperatures soared to midsummer levels. On the 20th, highs of 97° and 95° were recorded at Beulah and Bismarck, North Dakota, respectively. Cooler air moved in on the 22d, reducing daytime temperatures into the 60's and 70's, and a low of 23° was recorded at Willow City, North Dakota, on the 22d.

Scattered frost and freezing occurred in northern areas from eastern Washington to New York State, although no important crop damage was reported. A general frost occurred in Idaho on the 20th and 21st and a general freeze in the western two-thirds of Montana on the 22d.

The week's precipitation was highlighted by unusually heavy amounts in Florida, New England, and parts of Midcontinent region. The remnants of tropical storm Florence late in the week brought 6 to over 10 inches of rain to the lower east coast of Florida and caused some local flooding. Rainfall at the West Palm Beach Airport for the period September 1 through 26 now totals 22.43 inches, already more there than for any other month of record.

Heavy rains in New England were produced by a low-pressure system early in the week. On the 19th and 20th, Block Island, Rhode Island, measured 9.22 inches, with 8.27 inches falling in a 24-hour period, a new record. Totals of 3 to 5 inches were recorded in Connecticut and Massachusetts, but amounts tapered off to less than an inch in northern New England.

General frontal rains occurred in the Midcontinent area during the latter part of the period, with totals of 1 to over 2 inches in an area extending from the Texas Panhandle and northern Texas to northern Michigan. Paris, Texas, reported a weekly total of 6.57 inches. Amounts were also heavy in much of Arkansas, and Hot Springs had a weekly total of 9.63 inches.

Rainfall was extremely light in most of the area from the Ohio Valley to the Atlantic coast and south of the Ohio Valley to the Gulf. In the Far West, scattered light showers occurred in some areas, while most of California and Nevada received no measurable amounts. Light snow fell in the Colorado mountains, and 3 inches were reported in the Black Hills of South Dakota. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

**CORN EARWORM (*Heliothis zea*)** - OREGON - Damaging corn in Willamette Valley, with 60 percent of ears infested in Polk County fields and 40 percent in one Lane County field. Counts unusually high for latter area. (Capizzi, Morrison). UTAH - Infestation in canning corn slightly higher than 1959. Tare in canning corn in Utah County 6-7 percent, with 35 percent tip infestation. In Box Elder County, tare 2-3 percent, with 10 percent tip infestation. In Cache County, tare 1-2 percent, with 5 percent tip infestation. (Dorst). OKLAHOMA - Causing damage to late-planted grain sorghum in most parts of State. Light, up to 0.8 per sweep, in alfalfa in southwest. (Okla. Coop. Sur.). MISSOURI - Still causing some damage to late-planted sorghum throughout southwest and west central areas. Counts range from 0 to about 40 larvae per 100 heads. (Munson, Thomas, Wood). ALABAMA - Light damage to soybean pods in Mobile and Baldwin Counties (Shotts), and light to moderate damage to grain sorghum in Pike County (Grimes). VIRGINIA - Has caused little damage to soybeans thus far on Eastern Shore. (Hofmaster, Sept. 16). DELAWARE - Larvae present in soybeans and alfalfa in Kent County; 5-10 per 10 sweeps in field of alfalfa. (Burbutis, Mason).

**FALL ARMYWORM (*Laphygma frugiperda*)** - OKLAHOMA - Continued damaging to a variety of crops in localized areas throughout State. Egg laying underway and new generation expected soon. Pastures and lawns continued to be damaged in several counties; grain sorghum, alfalfa, small grains and a variety of newly planted crops damaged in northwest, north central, northeast and east central areas. (Okla. Coop. Sur.). LOUISIANA - Larvae practically disappeared from pastures in Tensas and East Carroll Parishes. (Spink). MISSOURI - Common in small grain and alfalfa in southwest; counts 0-3 larvae per square foot in small grain and 0-1 in alfalfa. (Munson, Thomas, Wood). DELAWARE - Larvae present in alfalfa in New Castle and Kent Counties. (Burbutis, Mason).

**SOUTHWESTERN CORN BORER (*Zea diatraea grandiosella*)** - NEW MEXICO - Larvae very abundant in stalks of field and sweet corn in Bernalillo, Sandoval, Quay, Curry and Roosevelt Counties. (N. M. Coop. Rpt.).

**EUROPEAN CORN BORER (*Pyrausta nubilalis*)** - WYOMING - Surveys in Sheridan, Fremont, Goshen, Laramie, Niobrara, Converse, Platte, Park, Big Horn and Washakie Counties negative. Results of survey in Crook and Weston Counties not complete. (Fullerton).

**SORGHUM WEBWORM (*Celama sorghiella*)** - OKLAHOMA - Damaging infestations continued in late-planted grain sorghum in south central, east central and northeast areas, especially in Stephens, Bryan, Muskogee, Mayes, Craig and Osage Counties. (Okla. Coop. Sur.). MISSOURI - Populations very high in very late sorghum. Several fields in southwest completely devoid of grain due to damage from this species and *Heliothis zea*. Counts of *C. sorghiella* range 5-40 larvae per head in late-planted sorghum. (Munson, Thomas, Wood). ALABAMA - Light to moderate damage to grain sorghum in Pike County. (Grimes).

**CORN LEAF APHID (*Rhopalosiphum maidis*)** - CALIFORNIA - Heavy on sweet corn in Chino area, San Bernardino County. *Rhopalosiphum* sp., near *maidis*, heavy on Bermuda grass in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.). WYOMING - Light infestations in 8 fields of corn checked in Converse County. (Fullerton). UTAH - Moderate infestation in some Washington and Kane County fall barley fields. (Knowlton). NEBRASKA - Infestations continued very light in milo. (Bergman).

**CHINCH BUG (*Blissus leucopterus*)** - ALABAMA - Moderate infestation on 18 acres of corn in Tallapoosa County. (Barwood).

**LEAF-FOOTED BUG (*Leptoglossus phyllopus*)** - ALABAMA - Caused light to moderate damage to grain sorghum in Pike County. (Grimes).

DIFFERENTIAL GRASSHOPPER (Melanoplus differentialis)- WEST VIRGINIA - Causing light damage to corn in northeast part of State during period September 1-23. (W. Va. Ins. Sur.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - WYOMING - Few adults found in corn in Platte County. (Fullerton). NEBRASKA - Adults averaged 3-6 per 10 sweeps in alfalfa in central and eastern crop districts. (Bergman). SOUTH DAKOTA - Adults averaged 2 per 10 sweeps in alfalfa in Brookings County area. (Mast). SOUTH CAROLINA - Damage to peanuts observed in Sumter and Allendale Counties. (Nettles et al.). DELAWARE - Adults present in soybeans in Kent County and average 2 per 10 sweeps in alfalfa in New Castle and Kent Counties. (Burbutis, Mason). VIRGINIA - Larvae lightly infesting peanut pods in Isle of Wight County. (Smith).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEBRASKA - Surveys in alfalfa produced 8-10 per 10 sweeps in Saunders County and 15 per 10 sweeps in Nance County. Adults very active in 2 fields of corn in Nance County. (Bergman). SOUTH DAKOTA - Adults averaged 11 per 10 sweeps in alfalfa in Brookings County area. (Mast).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NEBRASKA - Counts averaged 7 per 10 sweeps in alfalfa in Sherman County; adults in field of milo nearby averaged 32 per 100 plants. (Bergman).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WYOMING - Two fields of corn of 8 checked infested in Converse County. (Fullerton). UTAH - Caused severe damage to field corn in parts of Emery County, being most severe at Green River. (Knowlton).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Found for first time in Beaufort County, NORTH CAROLINA, and Dyer, Lauderdale, Weakley and Fayette Counties, TENNESSEE. (PPC, So. Reg.; Aug. Rpt.).

A GRASS BILBUB (Calendula phoeniciensis) - ARIZONA - Heavy populations of adults present in lawns and around homes in Phoenix area of Maricopa County. (Ariz. Coop. Sur.).

THRIPS - ARIZONA - Chirothrips falsus and C. mexicanus infestations very heavy in Yuma County commercial Bermuda grass seed fields. Counts average 20-25 per head. (Ariz. Coop. Sur.).

A CHINCH BUG (Blissus leucopterus insularis) - ALABAMA - Continues to cause severe damage to St. Augustine grass lawns in Baldwin County. (Shotts).

A SCALE (probably Antonina graminis) - NEW MEXICO - Causing some damage to Bermuda grass lawns in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - IDAHO - Infestations found for first time at several locations in Owyhee, Canyon and Payette Counties in southwestern area. Populations averaging approximately 5 per sweep, with both winged and wingless forms present, but, winged forms predominant. (Waters). CALIFORNIA - Medium populations in Benton Station area, Mono County. Showing little damage at present. (Cal. Coop. Rpt.). COLORADO - Averaged 50-60 per 100 sweeps in alfalfa in Bent, Crowley, Otero, Prowers and Pueblo Counties; 0-15 per 100 sweeps in Delta, Garfield, Mesa and Montrose Counties. (Colo. Ins. Sur.). NEW MEXICO - Populations continue to build up in scattered areas in Dona Ana County. (N. M. Coop. Rpt.). OKLAHOMA - Light to medium infestations present in most alfalfa checked in southwest, with counts ranging 5-60 per sweep. High percentage of populations winged. Populations increasing in area and should be watched closely. Damaging infestations present in newly planted alfalfa in localized areas of Alfalfa County. (Okla. Coop. Sur.). (Continued on p. 917).



NEBRASKA - Present in every county checked in central and eastern crop reporting districts. Most counties had counts of 1-6 per 10 sweeps with counts in Howard, Sherman and Nance Counties averaging 25 per 10 sweeps. (Bergman). MISSOURI - Populations increasing with the extended dry weather in southwest. Most damage evident on young alfalfa. Counts range from 10 to over 200 per sweep. (Munson, Thomas, Wood).

PEA APHID (Macrosiphum pisi) - UTAH - Some buildup noted in alfalfa in Uintah County. (Knowlton). COLORADO - Counts 0-100 per 100 sweeps in alfalfa in Delta, Garfield, Mesa and Montrose Counties. (Colo. Ins. Sur.). NEBRASKA - Infestation continues light; counts 10-25 per 10 sweeps in central and eastern counties. (Bergman). SOUTH DAKOTA - Averaged 20 per 10 sweeps in alfalfa in east central area. (Mast). DELAWARE - Counts 4-8 per sweep in alfalfa in New Castle and Kent Counties. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Light to medium infestations, up to 3 per sweep, common and increasing in alfalfa in southwest. (Okla. Coop. Sur.). ARIZONA - Infestations continue heavy in alfalfa statewide. Damage caused by girdling heavy in many fields. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - NEBRASKA - Counts 22-25 per 10 sweeps in Howard and Sherman Counties. (Bergman). DELAWARE - Adult counts very variable; 2 per 10 sweeps to 2 per sweep in alfalfa in New Castle and Kent Counties. Nymphs present in all alfalfa examined. (Burbutis, Mason).

MIRIDS - VIRGINIA - Very common on alfalfa, 5-40 per 20 sweeps, in Frederick, Rockingham and Spotsylvania Counties. (Tarpley).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - VIRGINIA - Adults very common in alfalfa, 2-6 per 20 sweeps, in Spotsylvania, Frederick and Rockingham Counties. (Tarpley).

A LEAFHOPPER (Empoasca sp.) - ARIZONA - Heavy infestations in some Yuma County alfalfa. (Ariz. Coop. Sur.).

CLOVER ROOT CURCULIO (Sitona hispidula) - OREGON - Root damage to new plantings of alsike clover in Klamath County and red clover in Clatsop County drastically reduced over that recorded during past 5 years. (Dickason). CALIFORNIA - This species and Hypera nigrirostris light in mixed pastures in Weymouth area, Humboldt County. (Cal. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NEBRASKA - Adults quite numerous in alfalfa in eastern area. (Bergman). CALIFORNIA - This species and Spodoptera exigua heavy on alfalfa in San Joaquin area, Fresno County. (Cal. Coop. Rpt.).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy infestations on alfalfa in San Joaquin area of Fresno County. (Cal. Coop. Rpt.).

A WEBWORM (Loxostege sp.) - OKLAHOMA - Causing damage to newly planted alfalfa in localized areas of Lincoln County. Present in only limited numbers in alfalfa in southwest. (Okla. Coop. Sur.).

A PYRALID - OREGON - Adults, possibly Udea profundalis, found in large numbers in Malheur County red clover fields week of September 11. No damage to clover evident. (Capizzi).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae present in soybeans and alfalfa in Kent County; counts 3-4 per 10 sweeps. (Burbutis, Mason). VIRGINIA - Infestations light on soybeans and beans on Eastern Shore. (Hofmaster, Sept. 16).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - ALABAMA - Caused ragging of leaves of soybeans in Mobile and Baldwin Counties. (Grimes).

STINK BUGS - LOUISIANA - Several species, primarily Nezara viridula, increasing in soybeans in Tensas and East Carroll Parishes. (Spink). ALABAMA - N. viridula not observed on soybeans in Mobile and Baldwin Counties; light activity noted on corn in Pike County, with as many as 2-3 per stalk in one field. (Grimes).

A SPIDER MITE (Tetranychus lobosus) - DELAWARE - Light infestation found on soybeans near Millsboro, Sussex County. Previously recorded on April 13, 1959, on strawberry plants in Sussex County. Determinations by E. W. Baker. These are the first published records of the species in the State. (Connell).

BEAN LEAF BEETLE (Cerotoma trifurcata) - LOUISIANA - Decreased in soybeans in Tensas and East Carroll Parishes. (Spink). VIRGINIA - Present on soybeans and beans on Eastern Shore. (Hofmaster, Sept. 16).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSOURI - Found in Mississippi and Scott Counties for first time during August. Only one infestation found in each county. Damage still evident in number of soybean fields in southeastern area. New infestation in Mississippi County found as a result of symptom survey. (PPC, Cent. Reg.; Aug. Rpt.). TENNESSEE - Several infestations found outside regulated area; 3 in Obion County and one each in Crockett, Gibson and Lauderdale Counties. All well removed from known infestations. All counties known to be infested, however. (PPC, So. Reg.; Aug. Rpt.).

FRUIT INSECTS

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single female taken in Steiner trap hung in avocado tree in Carpenteria, Santa Barbara County, in regular servicing for week of September 15-20. Collected by B. Osuna and determined by M. Washbauer. This is a new county record. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Total of 280 traps operated in Cameron, Hidalgo and Willacy Counties; inspections negative. Last positive specimens taken first week of June. (PPC, So. Reg.; Aug. Rpt.). CALIFORNIA - Trapping operations continued during August by California Department of Agriculture in San Diego, Riverside, San Bernardino and Orange Counties; results negative. (PPC, West. Reg.; Aug. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - In chemical control zones in States of Tamaulipas, Nuevo Leon and Sonora, survey crews inspected 63,207 citrus trees during August on 2,058 properties and found 21 infested trees on 5 properties. Infestations found in Municipio Allende, Nuevo Leon. Control by parasites good in biological control zone in Tamaulipas. All known infestations in chemical control zones have been treated one or more times. (PPC, Mex. Reg.; Aug. Rpt.). TEXAS - Surveys in Hidalgo and Cameron Counties during August negative. (PPC, So. Reg.; Aug. Rpt.).

CITRUS WHITEFLY (Dialeurodes citri) - LOUISIANA - Heavy infestation in grove of satsuma in Tangipahoa Parish. (Spink).

A SCARABAEID (Cyclocephala sp.) - ARIZONA - Grubs reported as damaging young citrus in Yuma County (CEIR 10(37):853) identified as this genus. Attempt being made to rear adults for species determination. (Ariz. Coop. Sur.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Medium on citrus in Mettler Station area, Kern County. (Cal. Coop. Rpt.).

Citrus Insect Situation in Florida - Mid-September - PURPLE SCALE (Lepidosaphes beckii) activity and populations will continue very low in all districts. FLORIDA RED SCALE (Chrysomphalus aonidum) activity will remain near present high level during next month. Populations are higher than in previous Septembers and infestations are moderate to heavy in 20 percent of survey groves. Where activity is high, 70 percent are in young stages. Highest activity is in upper east coast, Indian River, Bartow and Ridge districts. CITRUS RUST MITE (Phyllocoptura oleivora) activity showing slightly downward trend, which is expected to continue until October. Populations are at moderate level and about normal for time of year. Highest activity is in Ridge, Indian River, west coast and Brooksville districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

CODLING MOTH (Carpocapsa pomonella) - COLORADO - Injury light on apples being harvested in Delta County. (Colo. Ins. Sur.). NEW MEXICO - Late-brood larvae damaging fruit in apple orchards in Bernalillo and Sandoval Counties. (N. M. Coop. Rpt.).

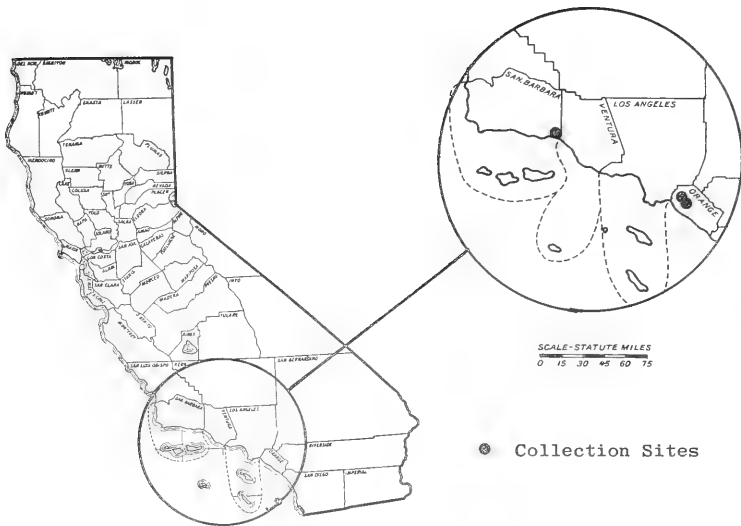
A TENT CATERPILLAR (Malacosoma sp.) - WASHINGTON - Numerous eggs on fruit trees and native trees near Bellingham, Whatcom County. (Holland, Sept. 16).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Populations heavy in many sections; damage is worst ever reported in Winnebago County, while it is difficult to find an undamaged apple in Lincoln County. (Wis. Coop. Sur.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - OREGON - Damaged pear root stock in a Salem nursery September 19; approximately 400 seedling trees killed or severely injured. (Bock).

ORIENTAL FRUIT FLY (Dacus dorsalis) IN CALIFORNIA

Date Collected	Number	Kind of Trap	Lure	Locality
1 - Week of July 24-29; det. on August 9.	One female	McPhail	SPID-7	Anaheim, Orange Co.
2 - August 31	One male	Steiner		Anaheim, Orange Co.
3 - Week of September 15-20	One female	Steiner		Carpenteria, Santa Barbara County



ORCHARD MITES - WASHINGTON - Moderate to severe damage caused to peaches by Aculus cornutus and to cherries by A. fockeui near Wenatchee, Chelan County. (Anthon, Sept. 16). CALIFORNIA - Tetranychus pacificus and T. telarius causing severe damage to English walnuts in Kelseyville, Lake County. (R. Gripp). COLORADO - High populations of T. telarius present in orchards in Delta and Montrose Counties where miticides not applied. (Colo. Ins. Sur.). NEW MEXICO - Bryobia rubricollis severely damaged foliage in untreated apple orchards. (N. M. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Heavy on pecan throughout State. (Spink). NEW MEXICO - Damaging foliage in Rio Arriba and Sandoval County orchards. (N. M. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - LOUISIANA - Heavy infestations observed on pecan throughout State. (Spink).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Causing pecan losses by cutting numerous branches with nearly mature nuts in Payne and Okfuskee Counties. Present infestation and damage greater than during past 2 seasons. (Okla. Coop. Sur.).

BLACK-MARGINED APHID (Monellia costalis) - OKLAHOMA - Heavy infestations of aphids, mainly this species, covering pecan leaves with honeydew in Okfuskee and Payne Counties. (Okla. Coop. Sur.). ARIZONA - Heavy on pecan trees statewide. Trees wet with honeydew in Yuma County. (Ariz. Coop. Sur.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Medium on grapes in Escondido, San Diego County. This is a new area within the county. (Cal. Coop. Rpt.). UTAH - Continues low in Washington County; controlled by parasites and predators. (Knowlton).

A GRAPE LEAFHOPPER (Erythroneura sp.) - NEW MEXICO - Heavy populations damaging grape foliage in Rio Arriba, Dona Ana, Sierra and Bernalillo Counties. (N. M. Coop. Rpt.).

#### TRUCK CROP INSECTS

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Eggs average 8.6 per 100 leaves on tomatoes in Bent, Crowley, Otero, Prowers and Pueblo Counties; about 19 percent of eggs parasitized. Some larval injury present. (Colo. Ins. Sur.). ALABAMA - Causing moderate damage to tomatoes in Pike County. Infestations increasing. (Stephenson). VIRGINIA - Infesting beans on Eastern Shore; damage generally light although several lots of beans have been rejected by buyers because of excessive larval damage. (Hoimaster, Sept. 16). DELAWARE - Larvae on carrots in New Castle County; averaged 4 per 10 sweeps in field of lima beans and very common on pumpkin squash in Kent County; and fairly common on untreated peppers in Sussex County. (Burbutis, Mason).

A HORNWORM (Protoparce sp.) - ALABAMA - Causing moderate damage to tomatoes in Pike County; infestations increasing. (Stephenson).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Heavy in tomatoes in Bonita area of San Diego County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Egg counts on lettuce very high statewide; however, controls very successful in preventing larval damage. (Ariz. Coop. Sur.). NEW MEXICO - Remains a problem on lettuce in Dona Ana County. (N. M. Coop. Rpt.). VIRGINIA - Severe on cucumbers in some areas on Eastern Shore. (Hoimaster, Sept. 16). DELAWARE - Larvae on lima beans and carrots in New Castle County and lima beans and cauliflower in Kent County. (Burbutis, Mason).

FALL ARMYWORM (Laphygma frugiperda) - ALABAMA - Damage to tomatoes in Pike County moderate; infestations increasing. (Stephenson).

EUROPEAN CORN BORER (Pyrausta nubilalis) - WISCONSIN - Caused moderate damage to peppers in Walworth County. (Wis. Coop. Sur.).

COTTON SQUARE BORER (Strymon melinus) - VIRGINIA - Infesting snap beans in one area on Eastern Shore. (Hofmaster, Sept. 16).

POTATO TUBERWORM (Gnorimoschema operculella) - VIRGINIA - Mining in potato foliage on Eastern Shore despite rather wet fall. (Hofmaster, Sept. 16).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Medium on leaves and fruit of strawberries in Salinas, Monterey County. (Cal. Coop. Rpt.).

CUCUMBER BEETLES (Diabrotica spp.) - DELAWARE - Adults of D. undecimpunctata howardi on lima beans and carrots in New Castle County, with 4 per 10 sweeps on carrots; common on pumpkin squash in Kent and Sussex Counties, congregating in blossoms, with average of 3 per blossom. (Burbutis; Mason). VIRGINIA - D. vittata more numerous on Eastern Shore than for some years. (Hofmaster, Sept. 16).

FLEA BEETLES (Epitrix spp.) - MARYLAND - E. fuscata destructive to eggplant in a garden at Cumberland, Allegany County. (U. Md., Ent. Dept.). VIRGINIA - E. cucumeris has been exceptionally numerous on potatoes on Eastern Shore. (Hofmaster, Sept. 16).

BLISTER BEETLES - WEST VIRGINIA - Undetermined species damaging to tomatoes in southeastern portion of State during period September 1-23. (W. Va. Ins. Sur.).

ONION THRIPS (Thrips tabaci) - OREGON - Extremely high populations built up on late onions in Marion and Benton Counties during September. (Capizzi).

APHIDS - COLORADO - Macrosiphum euphorbiae and Myzus persicae have completed migrations from summer host plants. (Colo. Ins. Sur.). CALIFORNIA - Brevicoryne brassicae heavy on cabbage in Linden, San Joaquin County. (Cal. Coop. Rpt.).

#### COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - No larvae found in gin trash or field inspections in central area as of September 24. One larva found during boll inspection in a field near Safford in Graham County. This area was not part of pink bollworm treatment area. (Ariz. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - LOUISIANA - Deposits of eggs very heavy on all available portions of plant in late cotton in Tensas and East Carroll Parishes. (Spink).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Apparently a slight buildup following a quick decline present in some Yuma County areas; counts average 4-5 larvae per leaf in heavier infested cotton. Infestations down in Pinal County. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Infestations continue to increase in central and southwest areas; migration of caterpillars requiring use of tinfoil barriers to protect other crops in some areas. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - MISSOURI - Heavy flights of adults observed throughout southern part of State. Susceptible cotton still present in southeast area. (Munson, Thomas, Wood).

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Medium to heavy populations continue to damage late-maturing cotton in all cotton-producing areas. Harvesting underway in most areas. (Okla. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE BEETLES (Dendroctonus spp.) - CALIFORNIA - D. brevicomis appearing in lower elevations (2,000-4,000 feet), with rapid increases. Some 500-1,000 ponderosa pines in 20,000-acre stand killed by this species and Ips sp. in Glenco-Wilseyville area of Calaveras County. Generally, D. monticolae and D. brevicomis have not caused damage indicated earlier in year. Salvage logging and treatment have been important factors in control. (S. Bryan, C. B. Eaton). ALABAMA - D. terebrans caused light to moderate damage to pines along logging roads in Baldwin County. This activity has been more prevalent during past month than at any time during year in this area. (Bateman). NORTH CAROLINA - D. terebrans caused significant damage on one acre of loblolly pine in Cumberland County (McElwee) and attacking about 75 trees scattered over 10 acres in Craven County (Kelley); attacking small scattered groups of pine in Onslow County (Crider) and small outbreaks observed in Columbus and New Hanover Counties (Dunselman). D. terebrans caused mortality of a few shortleaf pines in Wilkes County and attack followed lightning in Caldwell County. (McGee, Maxwell; N. C. For. Pest News Lett.). D. frontalis killed 4 shortleaf pines in Wilkes County. (McGee). VIRGINIA - Dendroctonus spp. active on few trees in isolated spots over State. (Va. Div. For. Sur. Rpt., Aug. Summ.).

IPS BEETLES (Ips spp.) - CALIFORNIA - Appearing in lower elevations of 2,000-4,000 feet, with rapid increases. Some 500-1,000 ponderosa pines killed by these beetles and Dendroctonus brevicomis in 20,000-acre stand in Glenco-Wilseyville area, Calaveras County. (S. Bryan, C. B. Eaton). VIRGINIA - I. calligraphus and I. avulsus involved in death of 60 shortleaf pines in a 60-year-old stand in Pittsylvania County. Ips spp. active on a few isolated trees in a few other areas in State. (Va. Div. For. Sur. Rpt., Aug. Summ.). NORTH CAROLINA - Four outbreaks present on Croatan Forest in Craven and Jones Counties; three major species involved and groups of 13-90 trees being killed. Trees being salvaged. (Kelley, Hinkley). Attacking small groups of loblolly pine in Cumberland, Harnett and Moore Counties. (McElwee). Small outbreaks present in New Hanover, Columbus and Brunswick Counties. Additional outbreak in Brunswick County involves 15 acres, with owner applying controls. (Kunselman). Attacking group of 12 trees in Onslow County. (Crider). Causing mortality on loblolly, shortleaf and Virginia pines in Alamance, Durham, Davidson, Iredell, Randolph and Rowan Counties, mostly in small groups; but some areas range up to  $\frac{1}{2}$  acre in size. This outbreak beginning to appear serious; if fading continues to occur, efforts should be made to salvage trees. (Ward, Johnson; N. C. For. Pest News Lett.).

WHITE-PINE WEEVIL (Pissodes strobi) - NORTH CAROLINA - Killing back leaders of white pine scattered throughout northwestern portion of State. Damage does not appear as serious as in 1958 and 1959. (Maxwell, McGee; N. C. For. Pest News Lett.).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - An estimated 1,000 trees in a 1,000-acre white-fir stand killed in Mountain Home State Forest, Tulare County. Many trees along roadway dying. (F. Otter).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - INDIANA - Infestation very heavy in northern third of State; larvae now in buds. (Schuder).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - NORTH CAROLINA - Caused extensive damage to all ages of pond pine in Hoffman Forest (Huff) and scattered attacks appearing in Davison and Orange Counties (Braswell, Harris; N. C. For. Pest News Lett.).

A PINE TIP MOTH - VIRGINIA - Caused moderate damage to a 10-acre loblolly pine plantation in Fluvanna County. Attack of 20 trees in loblolly pine plantation in Bedford County increasing. Damage continues widespread throughout Portsmouth area. (Va. Div. For. Sur. Rpt., Aug. Summ.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - UTAH - Galls less numerous than usual in Weber, Salt Lake and Cache Counties. (Knowlton).

ALLEGHENY MOUND ANT (Formica exsectoides) - NORTH CAROLINA - Devouring white pine seedlings in scattered areas on 25 acres. (Royal; N. C. For. Pest News Lett.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - NORTH CAROLINA - Defoliating loblolly pine in Davidson and Guilford Counties. (Braswell, Spivey; N. C. For. Pest News Lett.).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Causing moderate damage to pecan, redbud and hickory trees in Tallapoosa County. (Barwood). More damaging this year than for past several years. Many trees from Baldwin to Lee Counties with as many as 20-25 webs. (Grimes) NORTH CAROLINA - Defoliation still apparent on hardwood (primarily persimmon and sourwood) in eastern Piedmont; defoliating hardwoods in Negro Mountain area and Burke and Caldwell Counties. (Davison, Hinshaw, Spivey, Clayton, Maxwell; N. C. For. Pest News Lett.). Populations heavy in Mecklenburg and several other western counties. (Wray). WEST VIRGINIA - Damage to various hardwoods generally light during period September 1-23. (W. Va. Ins. Sur.). VIRGINIA - Evident on sourwood, cherry, ash and elm in Amherst, Fauquier and Rappahannock Counties; and on sourwood throughout Portsmouth area. (Va. Div. For. Sur. Rpt., Aug. Summ.).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - VIRGINIA - Large numbers on silver maple near Norge, James City County. (Bryant, Rowell; Sept. 12).

POPLAR TENT MAKER (Ichthyura inclusa) - NORTH CAROLINA - Defoliating 50 hybrid poplar trees in Wilkes County. (Doyle; N. C. For. Pest News Lett.).

WESTERN OAK LOOPER (Lambdina fiscellaria somnaria) - OREGON - First observed defoliating oak in vicinity of Monmouth week of August 13; had stripped leaves from 90 percent of trees within a mile square solid stand of oaks by September 20. Adults emerging at this site September 22. (Capizzi).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Infesting trees in localized areas of Love County. (Okla. Coop. Sur.).

A TUSSOCK MOTH (Hemerocampa sp.) - CALIFORNIA - Heavy larval infestation damaging ornamental birch in Salinas, Monterey County. (Cal. Coop. Rpt.).

NOTODONTIDS (Datana spp.) - MARYLAND - Larvae of D. major injuring red oak at Mayo, Anne Arundel County, and azalea at La Plata, Charles County. (U. Md., Ent. Dept.). VIRGINIA - D. ministra larvae and damage conspicuous on oaks in Pittsylvania County. (Dominick, Sept. 15).

ELM LEAF BEETLE (Galerucella xanthomelaena) - CALIFORNIA - Heavy on elms in Lone Pine area of Inyo County. Unusually heavy for this late in season. (Cal. Coop. Rpt.). OKLAHOMA - Continued heavy on elms in most areas. Damage reported in Woods, Alfalfa, Kiowa, Murray, Cleveland, Pittsburg, Le Flore, Cherokee and Washington Counties. Some adults appearing in homes in Alfalfa County. (Okla. Coop. Sur.). VIRGINIA - Damage noted in Fauquier, Orange, Culpeper and Prince William Counties on scattered trees. (Va. Div. For. Sur. Rpt., Aug. Summ.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Medium damage to shade trees common in Kingfisher; causing concern to homeowners in area. (Okla. Coop. Sur.). MARYLAND - Cutting twigs of European linden at Silver Spring, Montgomery County. (U. Md., Ent. Dept.).

LOCUST LEAF MINER (Chalepus dorsalis) - WEST VIRGINIA - Light to moderate damage to black locust general during the period September 1-23. (W. Va. Ins. Sur.).



AN OAK LEAF MINER - NORTH CAROLINA - An undetermined species causing extensive discoloration and mining of foliage in "sandhills" area. (Brown, Davison; N. C. For. Pest News Lett.).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - WEST VIRGINIA - Damaging to miscellaneous hosts during period September 1-23, in southern portion of State. (W. Va. Ins. Sur.).

MITES - INDIANA - Eotetranychus multidigituli heavy on honeylocust throughout State; many trees severely defoliated. (Schuder). CALIFORNIA - Heavy populations of Aceria mackiei on park live oaks in Oakland, Alameda County; Epitrimerus pyri medium on ornamental pear in Placentia, Orange County. (Cal. Coop. Rpt.).

A WALKINGSTICK - OKLAHOMA - Heavy numbers of unidentified species defoliating mesquite trees in southwest area. (Okla. Coop. Sur.).

MIMOSA WEBWORM (Homadaula albizziae) - ILLINOIS - Infestation found on honeylocust trees in Champaign on September 15 by Dr. L. L. English. This is the first report from Champaign County. (Ill. Ins. Rpt.). NEW JERSEY - Collected in all counties of the State during 1960 except Bergen, Passaic, Essex and Hudson. No search was made in Hudson County. Recorded for first time in 11 counties. (Merrill). NORTH CAROLINA - Caused leaf browning in Burke, Surry and Wilkes Counties. (McGee; N. C. For. Pest News Lett.). These are new county records.

LEAF CRUMPLER (Acrobasis indiginella) - CALIFORNIA - Heavy on cotoneaster in San Diego, San Diego County. (Cal. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeriformis) - NORTH CAROLINA - Causing defoliation and mortality throughout northern Piedmont counties. (Hinshaw; N. C. For. Pest News Lett.). Heavy on nursery plants in Surry County. (Wray). WEST VIRGINIA - Damaging to evergreens in Kanawha County during period September 1-23. (W. Va. Ins. Sur.). VIRGINIA - Infesting arborvitae in Orange County. (Rowell, Estes, Sept. 13).

JAPANESE BEETLE (Popillia japonica) - WEST VIRGINIA - Damage to roses general during period September 1-23. (W. Va. Ins. Sur.). VIRGINIA - Adults severely infesting roses on farm near Blacksburg, Montgomery County (Hoge, Sept. 20) and on sassafras and morningglory in Orange County (Tarpley, Sept. 22). Heavy on elm throughout the Staunton area. (Va. Div. For. Sur. Rpt., Aug. Summ.).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - CALIFORNIA - Heavy on Ceanothus sp. in Walnut Creek, Contra Costa County. (Cal. Coop. Rpt.).

AN APHID (Lachnus salignus) - MARYLAND - Infesting pussy willow at Oakland, Garrett County, and at Cumberland, Allegany County. (U. Md., Ent. Dept.).

WHITEFLIES - ALABAMA - Undetermined species caused considerable damage to privets and gardenias throughout central and southern areas of State; heavy damage particularly noticeable in Baldwin and Pike Counties. (Grimes).

SCALE INSECTS - LOUISIANA - Fiorinia theae heavy on camellias in Tangipahoa Parish. (Spink). ALABAMA - Heavy infestations of F. theae observed on camellias in southwest Mobile County; however, infestations are generally lower than usual for this time of year. Unaspis euonymi heavy on euonymus in Lee and Mobile Counties. (Grimes).

GIANT HORNET (Vespa crabro germana) - VIRGINIA - Debarking lilac bushes in an area of Spotsylvania County. (Kash, Sept. 20).

A CRICKET - ALABAMA - An undetermined species causing tremendous damage to camellias in Mobile County. (Seibels, Harmon, Self).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - *Culex tarsalis* and others increased slightly in northern area. Cooler nights and warm days apparently causing few extremely annoying mosquitoes to invade residences in areas along Sacramento River, Sacramento County. (Vec.Cont.). UTAH - Mosquito population decreasing since cooler fall weather arrived in Wasatch and Uintah Counties. Still some annoyance in Cache County and remains a serious problem in Bountiful area of Davis County. (Knowlton). OKLAHOMA - *Psorophora* spp., *C. tarsalis* and *C. salinarius* causing a nuisance in Payne County area. (Okla. Coop. Sur.). WISCONSIN - Mosquito populations continue very numerous and a problem in many localities. (Wis. Coop. Sur.). MARYLAND - *Aedes infirmatus* collected on man at Madison, Dorchester County, August 25. This is first record of this species in State since that of Connell in 1941. *P. cyanescens* recorded biting man at North Beach, Calvert County, on September 20. The only other record of the species in the State is from the Eastern Shore. (Mosq. Cont. Proj., Dept. of Ent.).

SCREW-WORM (*Callitroga hominivorax*) - OKLAHOMA - Reported cases of infestations becoming more common in State, especially in southern portion. (Okla. Coop. Sur.). LOUISIANA - Four new outbreaks reported; one in Franklin Parish, one in Madison Parish and 2 from Richland Parish. (Spink).

Current Screw-worm Situation Report - Week Ending September 25, 1960

State	: Cumulative Totals - 1960 :		
	: Cases	: Premises	: Counties or Parishes
Alabama	1	1	Geneva
Arkansas	17	16	Chicot
Louisiana	30	28	Richland Franklin De Soto Madison Red River
Mississippi	10	8	Issaquena Washington Sunflower
Totals	58	53	11

Date First Case Found This Year:

Alabama - 8-30-60, Arkansas - 7-28-60, Louisiana - 7-12-60, Mississippi - 7-29-60

Screw-worm Cases Intercepted at Inspection Stations:

1958 - 8, 1959 - 6, 1960 - 21 to date.

(Animal Dis. Erad. Div.)

FACE FLY (Musca autumnalis) - INDIANA - Populations continue high in Tippecanoe and Warren County areas. Counts on heads of infested animals range 30-65. Flies continue to invade homes in localized areas in Tippecanoe, Warren and White Counties. (Matthew). VIRGINIA - Common on cattle in Highland, Frederick and Rockingham Counties, but decreasing. None observed in Orange and Spotsylvania Counties. (Tarpley, Kash). NORTH CAROLINA - Counts 3-20 on faces of cattle in Watauga County and present in northern edge of Avery County. Infestation seems to be moving down mountains and not off into Piedmont. (Farrier). New co. records.

HOUSE FLY (Musca domestica) - WISCONSIN - Although populations vary considerably in different localities, total population appears about the same or slightly less than during 1959. (Wis. Coop. Sur.). OKLAHOMA - Annoying infestations persist in eastern portion of State; population declined in Payne-Noble County area. (Okla. Coop. Sur.). UTAH - Annoying in some restaurants and grocery stores in northern area. (Knowlton).

HORN FLY (Siphona irritans) - OKLAHOMA - Populations continue to decline in Payne-Noble County area and infestations continue to cause concern in eastern and southern areas of State. Only light populations noted on cattle in southwest. (Okla. Coop. Sur.). INDIANA - Populations continue present and range from 60 to over 200 per infested animal in Tippecanoe and Warren Counties. (Matthew).

HORSE FLIES - OKLAHOMA - Several species continued to annoy livestock in favorable wooded areas throughout eastern portion of State, but decreased in Payne-Noble County area. (Okla. Coop. Sur.).

AN EYE GNAT (Hippelates collusor) - ARIZONA - Populations extremely heavy on Yuma Mesa in Yuma County. (Ariz. Coop. Sur.).

WASPS (Polistes spp.) - MARYLAND - Various species abundant and troublesome around homes in all sections. (U. Md., Ent. Dept.).

PUSS CATERPILLAR (Megalopyge opercularis) - NORTH CAROLINA - Largest number of injuries reported this fall of any in past 7 years. (Farrier).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Common and locally heavy on cattle in some eastern areas. (Okla. Coop. Sur.).

#### STORED-PRODUCT INSECTS

Stored-Grain Insects in Alabama - RICE WEEVIL (Sitophilus oryza) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) causing light to moderate damage to stored corn in a Tallapoosa County area. (Barwood).

#### BENEFICIAL INSECTS

LADY BEETLES - SOUTH DAKOTA - Hippodamia spp. adults averaged 3 per 10 sweeps on Brookings area alfalfa, Brookings County. (Mast). WYOMING - Adults of Hippodamia sp. averaged 4 per corn plant in Platte and Converse Counties. (Fullerton).

NABIDS (Nabis spp.) - NEBRASKA - Averaged 5-18 per 10 sweeps in central area of State. (Bergman). WYOMING - Adults averaged 2 per corn plant in Platte and Converse Counties. (Fullerton).

LACEWINGS (Chrysopa spp.) - SOUTH DAKOTA - Larvae and adults abundant in fields of alfalfa in east central area. (Mast). OKLAHOMA - Averaged 2-3 per sweep in field of alfalfa surveyed in Stillwater area. (Okla. Coop. Sur.).

FLOWER BUGS (Orius spp.) - NEBRASKA - Averaged 10 per 10 sweeps in alfalfa in Butler and Saunders Counties. (Bergman). WYOMING - Averaged 6 adults per corn plant in Platte and Converse Counties. (Fullerton).

MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - INDIANA - Diggings in field of soybeans in Newton County showed 28 percent of all forms were eggs; 39 percent were first-instar larvae, 32 percent second instar and 1 percent third instar, on September 22. (Gould). TENNESSEE - Adults found in Anderson and McMinn Counties for first time. GEORGIA - A second beetle trapped at Macon, Bibb County. (PPC, So. Reg., Aug. Rpt.).

WHARF BORER (Naccerdes melanura) - WASHINGTON - Adults found near Bremerton, Kitsap County; damage unknown. Effort being made to locate source of infestation. (Buehler, Sept. 16).

WEEVILS - WASHINGTON - A weevil, probably Smicronyx tychioides, reared from gall on dodder in an alfalfa field near Gardena. (Klostermeyer, Sept. 16). Trachyphloeus bifoveolatus invading porches and entering homes in Kent, King County, and Kelso, Cowlitz County. (Brannon, Backstrom, Adlard; Sept. 16).

CRICKETS - RHODE ISLAND - Acheta sp. causing moderate nuisance by entering homes in Narragansett and South Kingstown. (Hansen). NEBRASKA - Unusually large number of Scapteriscus sp. has been sent in for determination from eastern area residents during past month. (Bergman).

BROWN-BANDED ROACH (Supella supellectilium) - CALIFORNIA - Heavy populations invading homes in Oroville, Butte County, and in San Benito County. (Cal. Coop. Rpt.).

MILLIPEDES - HAWAII - Great numbers of Oxidus gracilis found at Schofield Barracks. They were in lawns, crawling up water pipes outside and inside houses, even getting into beds and onto tables. The infestation is believed to come from wood buried in soil around houses. Reported by B. B. Sugerman. (Haw. Ent. Soc., Sept. 12). WISCONSIN - Migration of unspecified species has been underway for past 2 weeks, but appears on the decline. (Wis. Coop. Sur.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Heavy infestations in 600 acres of cropland in Chambers County. (Barwood).

CORRECTIONS

CEIR 10(39): Highlight page (Insect Detection) and page 895 - DUSKY SAP BEETLE (Carpophilus lugubris) - CALIFORNIA - should read new county record. Dusky sap beetle was first found in California at Fresno in 1937.

CEIR 10(39):896 - CITRUS RUST MITE (Panonychus citri) should read CITRUS RED MITE (Panonychus citri).

CEIR 10(39):898 - PRIVET MITE (Brevipalpus obovatus) should read PRIVET MITE (Brevipalpus obovatus).

CEIR 10(39):899 - APHIDS - CALIFORNIA - On second line, Drepanaphis acerifolii should read Drepanaphis acerifoliae.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta quinq.	Helio. zea
<b>ARKANSAS</b>							
Hope 9/15-21	27		6		2		38
Morrilton 9/15-21	22		9				290
Kelso 9/15-21	26		1				78
<b>CALIFORNIA</b>							
Davis 9/14-20	136		7		4	22	99
<b>DELAWARE</b>							
Bridgeville 9/17-20	38					51	44
<b>FLORIDA</b>							
Quincy 9/12	19	4	3			5	118
Monticello 9/20	10		3			1	8
Gainesville 9/7			1				
<b>ILLINOIS</b>							
Urbana 9/16-22	37	11	3	2	30	13	350
<b>INDIANA (Counties)</b>							
Lawrence 9/12,16	9			1		3	6
Tippecanoe 9/15-21	6			4		1	1
Vanderburgh 9/13,18	13			3		2	3
<b>LOUISIANA</b>							
Baton Rouge 9/16-22	415	927	56	386	7		160
<b>MARYLAND</b>							
Fairland 9/16-20	29	9	11		7	3	1
<b>MISSISSIPPI</b>							
*Stoneville 9/16-22	391	1,114	75	389	9	44	2,300
<b>NEBRASKA</b>							
Bushnell 9/7-19	74		5		9		1
Kearney 9/12-16	35	3	18	1	6	17	1
Lincoln 9/16,22			1				
North Platte 9/15-21	284	3	34		10		
Scotts Bluff 9/8-14	54		13		4		2
Sidney 8/30-9/8			1				
<b>SOUTH CAROLINA</b>							
Charleston 9/19-25	46	59	6	18		23	5
Clemson 9/17-23	116	287	18	514	4	4	1
<b>TENNESSEE (Counties)</b>							
Monroe 9/13-19	96	4	12	16		10	60
Madison 9/13-19	152	64	16	128	8	4	32
Maury 9/13-19	44	16	8	20	8	8	12
Robertson 9/13-19	52	8	4	68	4	3	9
Cumberland 9/13-19	216	8	4	32		8	20
Greene 9/13-19	64	16	20	36	8	20	72
Blount 9/13-19	48	16	8	40		16	40
Johnson 9/13-19	208	128	68	324	20	3	1
<b>TEXAS</b>							
Waco 9/17-23	560	7		429	148		3,055

\* Two traps - Stoneville.

LIGHT TRAP COLLECTIONS - continued

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Prod. ornith.	Perid. saucia	Protoparce sexta quinq.	Helio. zea
WISCONSIN							
Madison 9/13-20	163		20		5		16
Middleton 9/13-20	82		6		12		7
Arlington 9/13-20							49
*Theresa 9/13-20	110						42

Additional Collections

CALIFORNIA - (Davis 9/14-20); Prodenia praefica - 78; Spodoptera exigua - 1,070.

\* Three traps - Theresa

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ADDITIONAL NOTES

GEORGIA - BROWN STINK BUG (Euschistus servus), SOUTHERN GREEN STINK BUG (Nezara viridula) and SQUASH BUG (Anasa tristis) infestations are heavy on grain sorghum, beans and peas in Bulloch County. FALL ARMYWORM (Laphygma frugiperda) caused moderate defoliation of Coastal Bermuda grass in Crisp County and heavy defoliation of cotton and velvetbeans in Bulloch County. Fall armyworm is heavy on lawns in Fulton County and caused moderate defoliation of lawns and a golf course in Houston and Bibb Counties. FALL WEBWORM (Hyphantria cunea) is moderate on pecan trees in Burke County. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) is heavy on ornamental pines in Dougherty County and SADDLEBACK CATERPILLAR (Sibine stimulea) caused light defoliation of iris in Bibb County. Heavy infestations of an undetermined FLEA are present in homes in Macon County. (Johnson, McGee, Bryant, Forston, Bumgardner, Parkinson, Glover, Snodgrass).

NEVADA - MIGRATORY GRASSHOPPER (Melanoplus bilituratus) and TWO-STRIPED GRASSHOPPER (M. bivittatus) averaged 20 per square yard on 160 acres of alfalfa in Minden, Douglas County; third crop 50 percent damaged. Damage by ONION THRIPS (Thrips tabaci) is severe in several fields of onions in Reno-Sparks area, Washoe County. PINK BOLLWORM (Pectinophora gossypiella) light trap surveys negative through September 18 in cotton-growing areas. Adults of ALDER FLEA BEETLE (Altica ambiens) numerous and feeding heavily on alder, poplar and willow in Kingsbury area, Douglas County. (Bechtel, Burge, Artz).

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS  
ATTACKING CORN IN 1959 IN

ILLINOIS, KANSAS, MARYLAND, MICHIGAN AND NEBRASKA

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C M ACRES HAR- VESTED	D YIELD L/ A	E PEST OR PEST COMPLEX (see Legend P. 933)	F M ACRES NEEDING CONTROL PRACTICE	G M ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I % REDUCTION YIELD/A FROM UNTREATED	J % REDUCTION YIELD/A FROM POTENTIAL	K PEST- ICIDE \$/A	L APP- LICA- TION \$/A	M TOTAL \$/A	N TOTAL COST TREAT ALL/A TREATED	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$ PLUS CONTROL COST \$
	M ACRES PLANTED	M ACRES OR LBS. TREATED						TREATED	UNTREATED								
ILLINOIS State	10,243	10,050	67.0		51	8,942	1,325	96.24	89.41	7.1		2.50	.50	3.00	3,975	2.14	43,131
"	"	"	"	"	Cu 2/	394	87	87.2	78.2	10.3		2.50	1.00	3.50	305	6.22	1,151
"	"	"	"	"	Cu	152	Replanted	-----	-----	-----		-----	-----	-----	-----	-10.00	1,520
"	"	"	"	"	Ecb	201	82	-----	-----	7 3/4		1.50	1.00	2.50	205	2.90	848
"	"	"	"	"	Ce	-----	-----	-----	-----	0.36 4/		-----	-----	-----	-----	-----	2,627
Total																	49,277
KANSAS (dis- tricts)																	
NW	98.5	95.1	28.0		Seed tr. Soil tr. Ecb Ce	4.93 9.85 4.93 73.88	.60 .00 .00 .00	34.2 35.0 36.1 29.8	27.2 28.0 28.0 28.0	20 20 22 6		----- 1.25 1.40 1.25	----- 1.00 1.00 1.00	.13 2.23 2.40 2.23	.08 ----- ----- -----	6.66 4.34 5.46 -30.5/	29.5 66.9 38.7 129.0
WC	15.6	15.17	51.0		Ecb Ce	.00 11.70	.02 .00	53.0 54.2	51.0 51.0	4 6		1.40 1.25	1.00 1.00	2.40 2.23	.05 -----	-.46 .85	.1 36.3
SW	14.5	14.23	57.1		Ce Ce	10.88 .00	.00 .75	60.7 57.1	57.1 57.1	6 0		1.25 2.20	1.00 .25	2.25 2.45	----- 1.84	1.24 -2.45	35.4 2.6
NC	309.5	302.7	28.9		Seed tr. Soil tr. Ecb Ce Ch	15.48 46.43 77.38 232.13 18.60	.00 15.55 1.00 7.50	35.9 33.6 36.9 30.7 32.5	28.9 26.6 28.8 28.9 26.5	20 21 22 18 18		----- 1.25 1.40 1.25 2.33	----- 1.00 1.00 1.00 1.00	.13 2.23 2.40 2.25 3.33	----- 34.99 2.40 2.49	6.66 4.34 5.46 -30 2.49	105.1 244.7 602.5 403.3 89.6
C	114.5	111.03	31.7		Seed tr. Soil tr. Ecb Ce Ch	5.73 11.45 11.45 83.88 11.45	.00 3.00 .00 6.57	38.7 36.9 39.8 33.7 34.3	31.7 29.9 29.9 31.7 28.3	18 19 20 17 17		----- 1.25 1.40 1.25 2.33	----- 1.00 1.00 1.00 1.00	.13 2.25 2.40 2.25 3.33	----- 6.75 2.40 2.25 2.188	6.66 4.34 3.61 -31 2.49	38.9 64.1 90.1 166.6 50.3

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
SC	53.4 " "	52.17 " "	34.0 " "	Ecb Ce Ch	1.00 40.05 1.00	.30 .00 .50	39.7 36.1 37.0	31.6 34.0 31.0	20 6 16	1.40 1.25 2.33	1.00 1.00 1.00	2.40 2.25 3.33	.72 ---- 1.66	5.46 -.21 2.49	6.2 81.6 4.6
NE	626.5 " " " "	617.2 " " " "	45.0 " " " "	Seed tr. Soil tr. Ecb Ce Ch	62.65 125.30 156.60 469.88 18.80	50.00 5.20 1.50 .00 5.00	46.6 52.7 53.0 47.8 49.4	38.6 44.7 44.9 45.0 43.4	17 15 6 12	---- 1.25 1.40 1.25 2.33	---- 1.00 1.00 1.00 1.00	1.13 2.45 2.40 2.25 3.33	6.50 11.70 3.60 ---- 16.65	7.63 5.51 5.46 -.47 2.49	104.7 943.7 1,222.2 1,276.2 97.0
EC	417.5 " " " "	407.0 " " " "	48.2 " " " "	Seed tr. Soil tr. Ecb Ce Ch	20.88 62.63 156.60 313.13 20.88	10.00 11.10 2.25 .00 3.30	51.8 53.9 56.0 51.2 53.2	44.8 46.9 47.9 48.2 47.2	14 13 15 6 11	---- 1.25 1.40 1.25 2.33	---- 1.00 1.00 1.00 1.00	.13 2.25 2.40 2.25 3.33	1.30 24.98 5.40 ---- 10.99	6.66 4.54 5.46 -.66 2.49	75.2 374.8 479.8 911.2 113.3
SE	362.0 " " " "	352.4 " " " "	45.1 " " " "	Seed tr. Soil tr. Ecb Ce Ch	18.10 36.20 25.34 271.50 3.62	.10 .00 .00 .00 .35	52.0 52.1 53.2 47.9 50.5	45.0 45.1 45.1 45.1 44.5	13 13 15 6 12	---- 1.25 1.40 1.25 2.33	---- 1.00 1.00 1.00 1.00	.13 2.25 2.40 2.25 3.33	.01 ---- ---- ---- 1.16	6.66 4.54 5.46 -.47 2.49	122.0 245.8 199.1 737.4 20.2
Totals (Kansas)	2,012.0	1,967.0	41.5		2,342.24	124.59							177.63		9,210.6
MARYLAND corn $\frac{1}{2}$	----	472	54 bu./ acre	A, Ce, Ecb, Fa, G, Sb, Stb	----	----	----	54 bu./ acre	Approx. 10	----	----	----	----	----	2,880 (field loss only)
MICHIGAN Field corn	2,241	2,000	62 bu.	A, Ce, Ecb, Scm, S1	40	30	71	53	15	1.00	3.00	4.00	120	9.00	300
Sweet corn	14	11	65 cwt.	A, Ce, Ecb, Fb, Scm	14	10	88	42	35	8.00	12.00	20.00	200	114.00	425



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
NEBRASKA	7,500	6,841	50 bu.	Ce, Cls, Cr, Cu, Ecb, G, M	3,000	2,125	70 bu.	50 bu.	8.0	1.25	1.25	2.50	5,313	20.00	31,426

FOOTNOTES

1/ Figures in Illinois based on figures published in Illinois Cooperative Crop Reporting Service--Illinois Annual Crop Summary, December 22, 1959.

2/ Based on surface treatment to corn row after corn was up. There is probably some overlap in figures here and replant (lines 2-3).

3/ Based on research data from previous years.

4/ Determined by a survey in 207 fields this year.

5/ Assuming 100% control can be achieved with 1 application, which has not proved to be the case. The estimated gain from treatment will be less than that shown. However, the loss (column F) remains the same.

6/ Includes acreage infested with corn earworm, although chemical control for corn earworm in field corn is not practical and is not recommended.

7/ Corn, except fresh market and processing.

LEGEND

A = Aphids

Ce = Corn earworm (Heliothis zea)

Ch = Chinch bug (Blissus leucopterus)

ClA = Corn leaf aphid (Rhopalosiphum maidis)

Cr = Corn rootworms

Cu = Cutworms

Ecb = European corn borer (Pyrausta nubilalis)

Fa = Fall armyworm (Laphygma frugiperda)

Fb = Flea beetles

G = Grasshoppers

M = Mites

Sb = Sap beetles

Scm = Seed-corn maggot (Hylemya cilicrura)

Si = Soil insects

Stb = Stalk borers

Seed tr. = Seed treatment

Soil tr. = Soil treatment

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING COTTON IN 1959 IN

ARIZONA, MISSISSIPPI, NEW MEXICO AND TEXAS

A GEOGRAPHICAL UNIT 1/	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES PLANTED	D AV YIELD 2/	E PEST OR PEST COMPLEX (see legend)	F M ACREES NEEDING CONTROL PRACTICE	G M ACREES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I BEEF/A UNTREATED	J % REDUCTION YIELD/A FROM POTENTIAL	K COST OF CONTROL PRACTICE PEST-LOCIDE \$/A	L APP-LICATION \$/A	M TOTAL \$/A	N TOTAL COST TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$ PLUS CONTROL COST \$
	M ACREES HARVESTED	TREATED						TREATED	UNTREATED								
ARIZONA (Counties) Yuma, Pinal, Maricopa, Pima	364.2	364.2	364.2	2.0	ALL pests	291.2	203.0	2.4 bales	1.5 bales		28.6	5.00	20.00	4,060	44.00	17,783	
Cochise, Graham, Greenlee	38.8	38.8	38.8	1.3	ALL pests	23.3	16.3	1.8 bales	1.0 bales		24.5	5.00	20.00	325.6	24.80	1,292	
MISSISSIPPI	1,600	1,460	1,460	533	A, B, Bw, Pb, Sm, T	1,460	1,200	533 lbs. Lint	250 lbs. Lint		50 (untreated)	5.50	14.00	16,800	90.00	34,400	
NEW MEXICO	205	198	198	832 lbs/ acre	Lb, Sb, T	140	60	2.25 bales	1.75 bales		20	7.00	12.00	720	68.00	6,760	
TEXAS (Districts)																	
1 - N	449.9	431.0	431.0	1.25	B, Fb, T	430.9	359.9	1.40	.90		35	5.00	12.00	4,319.3	77.50	9,785.1	
1 - S	1,767.4	1,666.0	1,666.0	.90	B, Fb, T	1,654.4	1,415.9	1.10	.65		40	5.00	12.00	16,990.7	69.75	34,530.0	
2 - N	457.5	420.0	420.0	.62	B, Bw, Fb	419.4	320.2	.75	.53		29	3.00	8.00	2,562.0	34.10	5,970.5	
2 - S	557.6	531.0	531.0	.53	B, Bw, Fb	530.6	390.3	.65	.40		30	3.00	8.00	3,122.4	38.75	8,632.1	
3	40.5	38.0	38.0	.50	B, Bw, Fb	37.6	28.4	.60	.40		33	3.00	7.00	190.6	31.00	516.5	
4	910.4	882.0	882.0	.48	B, Bw, Fb, T	880.4	637.3	.70	.40		42	4.00	10.00	6,373.2	46.50	17,649.4	

Texas continued on page 935

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
TEXAS (cont'd) (districts)															
5 - N	106.4	101.2	.32	B, Bw, Fh, T	100.1	53.2	.40	.25	37	4.00	3.00	7.00	372.3	22.25	1,435.0
5 - S	79.7	77.1	.70	B, Bw, Fh	76.2	63.8	.80	.45	43	7.00	7.00	14.00	893.1	54.25	1,627.2
6	167.3	153.0	1.88	B, C1, Fh	151.8	150.6	2.15	.95	55	12.00	9.00	21.00	3,161.8	186.00	3,669.7
7	63.1	60.7	.55	B, Fh	59.1	31.5	.60	.40	33	5.00	3.00	8.00	252.2	31.00	1,137.2
8 - N	216.2	207.0	.47	B, Bw, Fh	206.4	151.3	.65	.35	46	6.00	4.00	10.00	1,513.3	46.50	4,102.0
8 - S	190.0	187.0	.92	B, Bw, Fh, Pbw	186.14	161.5	1.25	.50	60	7.00	4.00	11.00	1,776.6	119.25	3,239.0
9	194.6	190.0	.82	B, Bw, Fh	189.2	155.7	1.00	.50	50	8.00	5.00	13.00	2,024.2	77.50	4,245.4
10 - N	77.4	73.0	.61	B, Bw, Fh, Pbw	72.1	69.7	.75	.35	53	8.00	5.00	13.00	906.6	62.00	1,051.6
10 - S	397.0	378.0	1.00	B, Bw, Fh, Pbw	377.6	357.3	1.50	.50	66	10.00	7.00	17.00	6,074.1	155.00	9,119.1

FOOTNOTES

1/ Crop reporting districts in Texas, see CEIR 10(36):841.

2/ Bales per acre in Arizona and Texas; pounds per acre in New Mexico and Mississippi.

LEGEND

- A = Aphids
- B = Bollworm (Heliothis zea)
- Bw = Boll weevil (Anthonomus grandis)
- Cl = Cabbage looper (Trichoplusia ni)
- Fh = Fleahoppers
- Lb = Lygus bugs (Lygus spp.)
- Pb = Plant bugs
- Pbw = Pink bollworm (Pectinophora gossypiella)
- Sb = Stink bugs
- Sm = Spider mites
- T = Thrips

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING WHEAT IN 1959 IN

ILLINOIS, KANSAS, MICHIGAN, NEBRASKA AND TEXAS

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES PLANTED	D AV YIELD L/	E PEST OR PEST COMPLEX (see legend)	F ACRES NEEDING CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I TREATED	J UNTREATED	K % REDUCTION YIELD/A FROM POTENTIAL	L COST OF PEST-ICIDE S/A	M APPLICATION S/A	N TOTAL COST TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$ PDS CONTROL COST \$
	M ACRES HARVESTED	M ACRES TREATED						TREATED	BEEF/A								
ILLINOIS State	1,804	1,660	25.5	"	A	22	2	----	----	----	10.2/	2.50	1.00	3.50	7	1.40	106
"	"	"	"	"	Gb	36	plowed up	----	----	----	----	----	----	----	--	-10.00	234
"	"	"	"	"	T&M	22	0	----	----	----	30.2/	0	0	0	0	0	413
Total																	753
KANSAS (Cities)																	
NW	1,093	1,049	21.7	"	Gb	32.8	10.00	23.5	20.9	11	.75	1.00	1.75	17.50	2.93	124.2	
"	"	"	"	"	G	10.9	5.00	24.4	19.4	20	.61	1.00	1.61	8.05	7.39	61.2	
"	"	"	"	"	A	1.0	1.00	21.7	18.7	14	1.25	1.00	2.25	2.25	3.15	2.3	
WC	1,141	1,079	21.8	"	Gb	22.8	2.00	24.2	21.6	11	.75	1.00	1.75	3.50	2.93	100.8	
"	"	"	"	"	G	11.4	8.00	25.3	20.3	20	.61	1.00	1.61	12.88	7.39	43.5	
"	"	"	"	"	Dm 3/	11.4	-----	27.7	21.8	21	not recommended	not recommended	not recommended	-----	-10.62	121.1	
SW	2,004	1,911	18.1	"	Gb	20.0	-----	20.7	18.1	13	.75	1.00	1.75	-----	2.93	93.6	
"	"	"	"	"	G	20.0	8.00	21.0	16.1	23	.61	1.00	1.61	12.88	7.21	74.6	
"	"	"	"	"	Dm 3/	20.0	-----	24.0	18.1	25	not recommended	not recommended	not recommended	-----	-10.62	212.4	
"	"	"	"	"	Bom 3/	10.0	-----	24.0	18.1	25	not recommended	not recommended	not recommended	-----	-10.62	106.2	
NC	1,270	1,247	19.9	"	Gb	63.5	12.25	22.0	19.4	12	.75	1.00	1.75	21.44	2.93	261.3	
"	"	"	"	"	G	10.2	3.00	23.4	18.5	21	.61	1.00	1.61	4.83	7.21	68.3	
C	1,698	1,635	18.0	"	Gb	118.9	27.49	20.0	17.4	13	.75	1.00	1.75	48.11	2.93	475.9	
"	"	"	"	"	G	11.9	3.00	21.7	16.8	23	.61	1.00	1.61	4.83	7.21	83.3	
SC	2,244	2,177	18.8	"	Gb	112.2	4.62	21.3	18.7	12	.75	1.00	1.75	8.08	2.93	511.6	
"	"	"	"	"	G	11.2	1.50	23.1	18.2	21	.61	1.00	1.61	2.42	7.21	88.0	
NE	382	375	24.0	"	Gb	15.3	1.14	26.4	23.8	10	.75	1.00	1.75	2.00	2.93	68.3	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EC	442	436	24.9	Gb	22.1	8.00	26.6	24.0	10	.75	1.00	1.75	14.00	2.93	80.0
SE	596	576	23.9	Gb	41.7	23.30	25.0	22.4	10	.75	1.00	1.75	40.78	2.93	126.9
Totals (Kansas)	10,870	10,485	20.0		567.3	118.30							203.54		2,703.5
NEBRASKA	3,431	3,160	22 bu.	Cu, G, Gb, Hf, Wcm, Wgm	300	100	28 bu.	20 bu.	2.0	1.00	1.10	2.10	210	13.60	2,845
MICHIGAN Winter wheat	1,133	1,100	31 bu.	Hf	"Hessian fly free date"		----	----	5	----	----	----	----	----	1,168
TEXAS	3,696	3,320	22 bu.	A, Bwm, C, Gb, Wgm	221.96	194.8	23.5	21.5	8	.75	1.00	1.75	340.9	3.40	422.58

FOOTNOTES

1/ Figures in Illinois based on figures published in Illinois Cooperative Crop Reporting--crops--Illinois Annual Summary, 12-22-59.

2/ Estimated.

3/ Chemical control for date mites and brown wheat mites has not been practical and is not recommended in Kansas, at the present time.

LEGEND

A = Armyworm (Pseudaletia unipuncta)

Bwm = Brown wheat mite (Petrobia latens)

Cu = Cutworms

Dm = Date mite = Banke grass mite (Oligonychus pratensis)

G = Grasshoppers

Gb = Greenbug (Toxoptera graminum)

Hf = Hessian fly (Phytophaga destructor)

T & M = Thrips and Mildew

Wcm = Wheat curl mite (Aceria tulipae)

Wgm = Winter grain mite (Penthaleus maior)

Wsm = Wheat stem maggot (Meromyza americana)

LOSSES AND PRODUCTION COSTS ATTRIBUTABLE TO INSECTS AND RELATED ARTHROPODS

ATTACKING OATS IN 1959 IN

ILLINOIS

A GEOGRAPHICAL UNIT	B FROM CROP OR LIVESTOCK REPORTING SERVICE		C ACRES HAR- VESTED	D YIELD AV 1/	E PEST OR PEST COMPLEX	F ACRES NEEDING CONTROL PRACTICE	G ACRES TREATED	H YIELD IN BU., TONS, BALES OR LBS.		I % REDUCTION YIELD/A FROM POTENTIAL	J PEST- ICIDE \$/A	K COST OF CONTROL PRACTICE		L AP- PLI- CATION \$/A	M TOTAL \$/A	N TOTAL COST TREAT ALL/A TREATED M	O ESTIMATED GAIN OR (LOSS) FROM TREATMENT \$/A	P YIELD LOSS \$/A PLUS CONTROL COST \$/A	
	M ACRES PLANTED	N ACRES AV						TREATED	UNTREATED										
State	2,380	2,233	40.0	Aphids & yellow dwarf disease 2/	2,233	79 3/4	----	----	27.3	1.75	1.00	2.75	217	-2.75	19,838				
"	"	"	"	"	299 4/5	Destroyed (plowed up, unharvested, etc.) 4/													
Total																			6,434
																			26,272

1/ Based on figures published in Illinois Cooperative Crop Reporting Service--crops--Illinois Annual Summary, December 22, 1959.

2/ The aphids were mainly greenbug although other species were also present. We have no way of separating damage caused by aphids and that caused by the disease of yellow dwarf; therefore, the damage estimates are combined.

3/ Applied too late to be effective in preventing damage.

4/ Based on farm advisor estimates.

1959 COLORADO INSECT LOSS ESTIMATES

CROP	ACRES REPORTED	YIELD M	UNIT VALUE \$	TOTAL VALUE M\$	LOSS M	PERCENT LOSS	VALUE OF LOSS M\$	ACRES M	AGRES CONTROLLED	AGRES INVESTED	COST OF ESTIMATED SAVINGS		PEST COMPLEX (see legend)
											M\$	M\$	
Rangeland- Farm and Ranch	17,858	898 cwt.	22.00	19,775	17	cwt.	377	312	86,500	173	683		
Wheat	1,735	35,803 bu.	1.60	57,285	742	bu.	2.1	1,188	87,600	175	245		G, Bom, G, Ch, H, H, cer., L, amoe., Wcm
Alfalfa	668	11,735 ton	18.00	29,657	73	ton	4.3	1,310	211,800	761	1,165		Ac, Alf, Ar, Bb, G, Lb, Pa, Sae, S, Tsm.
Barley	498	11,207 bu.	.90	10,087	492	bu.	4.3	443	52,860	106	132		G, Gb, Wcm
Corn (ear)	315	13,427 bu.	1.10	14,770	660	bu.	4.7	726	9,225	32	116		Ce, Fa, Tsm, Wcr
Corn (ensilage)	188	2,109 ton	8.00	16,868	122	ton	5.5	979	17,900	63	224		Ce, Fa, Tsm, Wcr
Beans (dry)	186	1,290 cwt.	5.70	7,352	41	cwt.	3.1	231	33,580	67	766		Mbb
Sugar Beets	135	2,276 ton	12.00	27,277	12	ton	.6	144	88,920	178	4,265		B1, Bw, Bv, G, Gs
Potatoes	61	11,911 cwt.	1.70	20,249	93	cwt.	.8	159	60,635	637	9,277		Fb, Gpa, P, Ps
Apples	17	2,318 bu.	2.50	5,794	179	bu.	7.2	446	16,370	491	5,794		Aa, Cm, Tsm, Maa
Lettuce	16	4,047 ctn.	2.00	9,350	5	ctn.	.2	11	15,050	53	752		Bw
Cabbage	8	1,561 bu.	2.70	4,215	78	bu.	4.8	212	9,214	97	230		Lbf, Om, Ot, S
Peaches	5	827 cwt.	1.50	1,241	4	cwt.	.5	6	6,800	68	1,377		H, Lb, Psm, Ptb, Tsm
Tomatoes	4	34 ton	22.50	763	.6	ton	1.9	14	3,375	12	20		Hb, Lb, Psm, Ptb, Tsm
Beans (snap)	2	8 ton	98.00	774	1	ton	1.0	7	2,811	30	63		B1, Ce, Hw, Ps
Corn (sweet)	2	78 bu.	1.50	117	.9	bu.	10.2	1	2,060	22	404		Mbb
Pears	1	109 bu.	2.25	246	6	bu.	5.3	14	1,809	25	117		Ce, Fa, Tsm
Totals	21,709			\$229,915			\$6,313	1,916	707,239	\$2,991	\$25,878		Cm, Plbm, Rb1, Tsm

LEGEND

- Aa = Apple aphid (*Aphis pomi*)
- Ac = Alfalfa cutworm (*Chorizagrotis auxillaris*)
- Alc = Alfalfa caterpillar (*Golias philocice eurythems*)
- Alf = Alfalfa weevil (*Hypera postica*)
- Bb = Blister beetle (*Epicauta fabricii*)
- B1 = Beet leafhopper (*Circulifer tenellus*)
- Bs = Beet webworm (*Loxostege sticticalis*)
- Bom = Brown wheat mite (*Petrobia latens*)
- Bw = Brown wheat mite (*Petrobia latens*)
- Bv = Brown wheat mite (*Petrobia latens*)
- Ce = Corn earworm (*Heliothis zea*)
- Ch = Corn earworm (*Heliothis zea*)
- G = Codling moth (*Carpocapsa pomonella*)
- Ga = Green peach aphid (*Myzus persicae*)
- Gp = Garden symphid (*Scutiscella immuculata*)
- H = Hessian fly (*Phytomyza destructor*)
- H, cer. = Hylemya cerealis
- Hb = Harlequin bug (*Murgantia histrionica*)
- Hw = Hornworms (*Protoparce spp.*)
- Om = Onion thrips (*Thrips tabaci*)
- Amoe. = Leptostrernus amoenus
- Lb = Lygus bugs (*Lygus spp.*)
- Lbf = A lesser bulb fly (*Eumerus strigatus*)
- Mbb = Mexican bean beetle (*Epiplachna varivestis*)
- Om = Onion maggot (*Hyalema antiqua*)
- P = Potato aphid (*Macrosiphum euphorbiae*)
- Pa = Pea aphid (*Macrosiphum pisi*)
- Plbm = Pear leaf blister mite (*Eriophyes pyri*)
- Ps = Potato psyllid (*Paratrioza cockerelli*)
- Psm = Peach silver mite (*Aculus cornutus*)
- Ptb = Peach twig borer (*Anarsia lineatella*)
- Rb1 = Red-banded leaf roller (*Argyrotaenia velutinana*)
- Saa = Seed-corn maggot (*Therioaphis maculata*)
- Sa = Seed-corn maggot (*Therioaphis maculata*)
- S, Laen. = Systema laenata
- Tsm = Two-spotted spider mite (*Tetranychus telarius*)
- Wcm = Woolly apple aphid (*Eriosoma lanigerum*)
- Wcr = Wheat curl mite (*Aceria tulipae*)
- Wcr = Western corn rootworm (*Diabrotica virgifera*)

NOTE: M = 1,000







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*Cooperative*

**ECONOMIC INSECT**

**REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

FALL ARMYWORM continues damaging in Oklahoma and destructive in some fields of small grain and alfalfa across Tennessee. (p. 963). GRASSHOPPER CONTROL (Range-land Cooperatively Treated During 1960 Season) (Map). (p. 964). GRASSHOPPERS causing damage to small grains in some areas of Idaho, New Mexico and Oklahoma. Economic numbers of SPOTTED ALFALFA APHID present in Butler Creek area of Umatilla County, Oregon; heavy in some alfalfa as far east as Claremore in northeast Oklahoma; increasing in central Arizona; counts 100-400 in Colorado; and causing some damage in Nebraska. (p. 965).

FALL WEBWORM heavily infesting pecan trees in northwest Louisiana. (p. 967).

Several species of FLIES of concern on cattle in Oklahoma and several new SCREW-WORM infestations reported in Louisiana. (p. 971).

New KHAPRA BEETLE infestation found in Phoenix area of Arizona (only known infestation remaining in State). (p. 971).

INSECT DETECTION: New North American records are red tick (Rhipicephalus evertsi evertsi) in Florida and a seed chalcid (Eumegastigmus transvaalensis) in California. (p. 970). New State records are a white-fringed beetle (Graphognathus leucoloma striatus) in Kentucky and an unidentified embiopteran in Oklahoma (this is first record of order in State). (p. 972). New county records are pink bollworm in St. Francis County, Arkansas (p. 968); European corn borer in Bath County, Virginia (p. 963); and walnut husk fly in Amador County, California (p. 967).

CORRECTIONS (p. 973).

## SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1959

Ornamental and Shade Tree Insects

Ornamental Insects - (p. 975).

Shade Tree Insects - (p. 982).

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Reports in this issue are for week ending October 7, unless otherwise indicated.

WEATHER OF THE WEEK ENDING OCTOBER 10

Pleasant autumn weather with mild sunny days and cool nights was the prevailing weather pattern over much of the Nation for the second consecutive week.

The warmest section of the country, relative to normal, was the northern Great Plains where weekly averages were as much as 9° above seasonal levels. Bismarck, North Dakota, had a high of 91° and Aberdeen, South Dakota, 95°. The week was cooler than normal in the Great Lakes region and Northeast, by as much as 6° at a few stations in the latter area.

Scattered freezes and frost occurred across the entire northern section of the country, with a low of 15° at Big Piney, Wyoming. A few scattered sections even in extreme northern areas, however, have not yet had heavy frost.

The northern Great Plains also was part of the most extensive dry area for the week. Virtually no measurable precipitation fell between the Great Lakes and the Rockies and in the central Great Plains as far south as northern Oklahoma. In the Pacific Northwest warm, sunny days the first half of the week were followed by cooler, showery weather, with precipitation amounts generally ranging from a few hundredths to 1/2 inch. Snow fell in the higher mountains and most ranges in Montana are covered.

The first autumn storm in the Far Southwest brought substantial precipitation to much of that area during the weekend. Amounts totaled over 2 inches in the north central and eastern mountain sections of Arizona, and from 1/3 to over 1 inch over most of the western half of New Mexico.

The week's heaviest and most frequent precipitation covered an area that extended from southern Illinois and eastern Texas to the Atlantic coast. Rain fell in this area on 3 to 6 days, and totals generally ranged from 1/2 to over an inch, although over 2 inches were measured in the southern Appalachians, eastern Mississippi, and western Alabama. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - OKLAHOMA - Damaging infestations continued in some wheat fields in northwest area, with counts ranging up to 2-4 per linear foot in infested fields. Counties affected include Woodward, Major and Beaver. Damage apparently declined in most of other areas of State. No damage noted in fields checked in northeast area. (Okla. Coop. Sur.). ARKANSAS - Larvae present in some fields of fall-sown small grains. (Ark. Ins. Sur.). TENNESSEE - Found in destructive numbers in scattered small grain and alfalfa fields across State. (Mullett). VIRGINIA - Medium on small grains, locally, at South Lebanon, Russell County. Only known occurrence in county to date. (Altizer, Sept. 26). Third-instar larvae attacking rye, locally, at Eastville, Northampton County. (Hofmaster, Oct. 5).

EUROPEAN CORN BORER (Pyrausta nubilalis) - VIRGINIA - Found for first time in Bath County near Warm Springs. Det. by H. W. Capps. (Stockbridge, Walsh, Rowell; Aug. 11). Medium, locally, on corn at Tidewater Trail, Spotsylvania County. (Kash, Sept. 27). WEST VIRGINIA - The 1960 fall abundance survey completed in 15 counties. State average was 58 borers per 100 plants. (W. Va. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Heavy populations occurring on corn in Vista, San Diego County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - WYOMING - Few larvae found in corn throughout Laramie County. (Fullerton). WISCONSIN - Most abundant in midseason to late-planted corn; majority of larvae in second and third instars. (Wis. Coop. Sur., Sept. 30). DELAWARE - Larvae generally present on soybeans and alfalfa; counts vary from present to one per sweep in New Castle and Kent Counties. (Burbutis, Mason).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Spotty, moderate to heavy infestations still being found in corn in Socorro, Sierra and Dona Ana Counties. (N. M. Coop. Rpt.). IDAHO - Adults and nymphs collected from foxtail in Tammany area, Nez Perce County, September 27. (Portman).

RUSTY PLUM APHID (Hysterozoea setariae) - ARIZONA - Infestations medium to heavy in some sorghum in central area. Infestations considerably lower than in 1959, however. (Ariz. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Damaging late fields of grain sorghum in east central and northeast areas; counts 40-100 per head in limited number of late fields in those areas. (Okla. Coop. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Adults common in latest maturing heads in a field of grain sorghum in Ottawa County; counts ranged 10-25 per head. (Okla. Coop. Sur.).

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - CALIFORNIA - Medium infestations on corn in Thermal, Riverside County. (Cal. Coop. Rpt.).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - WYOMING - Few adults found in alfalfa and corn in Laramie County. (Fullerton). NEBRASKA - Larvae damaged wheat in Burt County. (Roselle). TEXAS - Heavy, local infestations of adults on sorghum, cotton and garden crops in Scurry County. (Texas Coop. Rpt.). DELAWARE - Adults fairly common in soybeans and alfalfa statewide. (Burbutis, Mason).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NEBRASKA - Adults present in corn in Hall County area; populations decreasing rapidly. (Roselle).

WHEAT CURL MITE (Aceria tulipae) - WYOMING - Found on most fall-planted wheat infected with wheat streak mosaic near Carpenter, Laramie County. (Shannon, Fullerton).

# GRASSHOPPER CONTROL

Rangeland Cooperatively Treated During 1960 Season





A FIELD CRICKET (*Acheta sp.*) - WISCONSIN - Damage not assessed as being significant, although populations are high in many areas. (Wis. Coop. Sur., Sept. 30).

GREEN JUNE BEETLE (*Cotinis nitida*) - VIRGINIA - Infesting lawns, locally, in Goochland, Wythe and Lunenburg Counties. (Tarpley et al., Sept. 30). NORTH CAROLINA - Larvae injuring pasture in Rutherford County; emerging from lawns in Wake County after heavy rains and crawling on drives and sidewalks. (Wilson, Moore, Farrier). TENNESSEE - Larvae prevalent in newly seeded fields over State. (Mullett).

JAPANESE BEETLE (*Popillia japonica*) - VIRGINIA - Spotted and medium in some lawns in Stanley, Page County; 15-20 per square foot in one lawn inspected. (Saunders, Jr.).

GRASSHOPPERS - IDAHO - Relatively small populations causing rather large amount of damage to fall wheat in Fremont County due to continued dry weather. Except for one field almost completely defoliated, damage principally to margins of winter wheat. As soil moisture not too plentiful, recovery of wheat not too rapid; replanting of some wheat required. Populations along margins 3-5 per square yard; up to 10 in more favorable habitats. Conservation Reserve lands responsible for large share of populations that destroyed top vegetative ground cover and 70 acres of wheat where situation most severe. Populations within field ranged 3-10 per square yard and 5-10 in adjacent Conservation Reserve lands. (Evans). NEW MEXICO - Adult survey conducted during September; 31,400 acres of cropland and 140,000 acres of rangeland found with moderate or more populations. Rangeland infestations mostly in eastern counties. Cropland infestations mostly on dry-land farms in eastern counties and in irrigated areas in middle and northern Rio Grande Valley. Conditions for egg deposition favorable over most of infested area. Infestations in northeastern Curry County causing minor damage along margins of wheat fields. (N. M. Coop. Rpt.). NORTH DAKOTA - Egg survey in southeast counties generally supported infestation level of adult survey. Predation by bombyliid and carabid larvae high in southern border counties. (N. D. Ins. Sur.). WISCONSIN - Adults appear very abundant in several sections. Most mating of *Melanoplus femur-rubrum* and *M. differentialis* completed; egg laying continues during warm periods. (Wis. Coop. Sur., Sept. 30). OKLAHOMA - Several species damaging margins of some small grain fields in Major, Woodward and Beaver Counties, as much as 50 feet in from fence rows in some fields checked. Also reported damaging fields of small grain in Payne, Caddo and Atoka Counties. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Observed in all fields of alfalfa checked in Malheur County from west of Homedale to Vale and north to Ontario. Populations did not exceed 3 per sweep; fewer than 1 per sweep in most fields. Economic numbers present in Butler Creek area of Umatilla County; infested fields show noticeable injury. (Capizzi). COLORADO - Ranged 100-150 per 100 sweeps of alfalfa in Bent, Crowley, Otero and Prowers Counties and 300-400 per 100 sweeps in Pueblo County. (Colo. Ins. Sur.). ARIZONA - Increasing in central area alfalfa. (Ariz. Coop. Sur.). TEXAS - Light on alfalfa in Brazos and Burleson Counties. (Randolph). OKLAHOMA - Heavy, up to 150 per sweep, in some alfalfa as far east as Claremore in northeast area; light to heavy infestations common west and south of that point. This continues to present a threat to fields of fall-seeded alfalfa over most of State. Populations declined somewhat in fields where localized rains occurred during past week. Counties reporting light to heavy infestations were Tillman, Greer, Stephens, Johnson, Caddo, Grady, Seminole, Pawnee, Kay, Washington and Rogers. (Okla. Coop. Sur.). NEBRASKA - Counts per sweep in alfalfa by counties as follows: Jefferson - 0.03; Thayer - 0.3; Nuckolls - 0.03; Webster - 18.2; Franklin - 26.6-176.5; Harlan - 48-51; Furnas - 21.8-25.6; Red Willow - 32-37.6; Hitchcock - 22.6-51; Dundy - 36; Kearney - 1.3; Adams - 0.4; Fillmore - 0.07. Some yellowing in Red Cloud area of Webster County, where counts 18.2 per sweep, and general yellowing in Franklin area of Franklin County, where counts 176.5 per sweep. (Manglitz).

PEA APHID (Macrosiphum pisi) - IDAHO - Remains generally abundant in Bingham County, although populations in heavily infested fields have declined. (Bishop, Sept. 30). WYOMING - Averaged 10 per 25 sweeps in alfalfa in Laramie County. (Fullerton). DELAWARE - Counts averaged 5 per 10 sweeps in Sussex County, 10 per 10 sweeps in Kent County and 20 per sweep in New Castle County in alfalfa. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations down in alfalfa statewide; however, populations still high in some fields. (Ariz. Coop. Sur.). TEXAS - Averaged 15-20 per 5 sweeps in test plots in Brazos and Burleson Counties. (Randolph). OKLAHOMA - Common in alfalfa across State; counts ranged 0.5-3 per sweep. (Okla. Coop. Sur.). ALABAMA - Light to moderate infestations in alfalfa in Lee County; damaged one 10-acre field. (Grimes).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 15 per 25 sweeps in alfalfa in Laramie County. (Fullerton). OKLAHOMA - L. lineolaris common in alfalfa throughout State, with populations apparently showing a gradual increase in most areas. Counts ranged 0.5-3 per sweep. (Okla. Coop. Sur.). DELAWARE - Adults and nymphs of L. lineolaris present in alfalfa and soybeans over State; adults present in cover crops in Kent County. (Burbutis, Mason).

PLANT BUGS (Adelphocoris spp.) - DELAWARE - Adults and nymphs of A. rapidus present on alfalfa over State, with counts averaging 3-4 per 10 sweeps in Kent and Sussex Counties. Adults of A. lineolatus present in alfalfa in New Castle County. (Burbutis, Mason).

LEAFHOPPERS - ALABAMA - Various species found in extremely heavy numbers in alfalfa in Lee County. (Grimes).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - WEST VIRGINIA - Survey in alfalfa and clover in 17 counties completed. State average 2.2 per sweep. (W. Va. Ins. Sur.). DELAWARE - Adults present in alfalfa in New Castle County. (Burbutis, Mason).

SOYBEAN INSECTS - SOUTH CAROLINA - Infestations nil or very light in Berkeley County and no outbreak noted in Colleton County. Many farmers treating in Marlboro County, with more defoliation noted than ever before. Less than 10 percent of beans treated in Dorchester County. Trichoplusia ni present in most fields in Sumter County and treatments excellent and preventing insect damage in Clarendon, Charleston and Dillon Counties. Insects varied from field to field and farmers advised to use individual judgement in control measures in Florence County. Most every insect known to attack beans present in moderate numbers in most young fields in Lee County, with a few fields showing large numbers of Heliothis zea. Larval specimens collected on soybeans in Allendale County on August 25 by W. C. Nettles were determined as follows: Anticarsia gemmatalis - 1; Spodoptera exigua - 2; Trichoplusia ni - 7; T. oxygramma - 25; Pseudoplusia includens - 1; Prodenia eridania - 3. Most significant find in the determinations is that of 33 loopers; 25 were T. oxygramma. (Nettles et al., Sept. 28).

SADDLEBACK CATERPILLAR (Sibine stimulea) - NORTH CAROLINA - Feeding on peanuts in Hoke County and on undetermined host in Wake County. (Chadwick, Farrier).

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Adults and larvae common on soybeans in southeast Sussex County. (Burbutis, Mason).

#### FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - OREGON - Partial third generation appeared in Jackson County, first week of September. Additional controls applied to prevent late entries into fruit. (Gentner). WEST VIRGINIA - Caused 5 percent loss in some apple orchards in eastern panhandle area. (W. Va. Ins. Sur.).

WOOLLY APPLE APHID (Eriosoma lanigerum) - ALABAMA - Caused extremely severe damage to roots of apple trees. (Guyton). CALIFORNIA - Heavy on plum and apple roots in a nursery in Mountain View, Santa Clara County. (Cal. Coop. Rpt.).

APHIDS - COLORADO - Fall migrants of Myzus persicae colonizing on peach trees and fall migrants of Aphis pomi and Anuraphis roseus colonizing on apples in Mesa and Delta Counties. (Colo. Ins. Sur.).

A COREID (Liorhyssus sp.) - CALIFORNIA - Heavy on avocados in Fallbrook, San Diego County. (Cal. Coop. Rpt.).

PEAR PSYLLA (Psylla pyricola) - OREGON - Resistance to organic phosphate insecticides continued through 1960 season in Jackson County. (Gentner). CALIFORNIA - Larvae and adults occurring in pear culls in Concord, Contra Costa County. (Cal. Coop. Rpt.).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - IDAHO - Infestations reported on pears at Orofino, Clearwater County. (Fitzsimmons, Sept. 30).

ORCHARD MITES - WEST VIRGINIA - Unspecified species caused some damage to apples in localized areas of eastern panhandle section of State. (W. Va. Ins. Sur.). CALIFORNIA - Bryobia rubrioculus heavy on almonds in Fresno, Fresno County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - LOUISIANA - Pecan trees in most northwest parishes heavily infested, with nests ranging as high as 12 per tree. (Spink).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Present in Mayhan variety pecans in Lee County; inside portion of shucks completely destroyed; 7 larvae taken from one shuck. (Guyton).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Present in seedling pecans in Lee County; infestations extremely high with respect to number of pecans on trees. (Guyton).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Larvae light in peach fruit in Santa Paula, Ventura County. Adults taken in Frick trap at Pioneer, Amador County, for first record for county. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Infestations have increased in cabbage in central area; averaged 2 larvae per plant in some fields. Egg counts in lettuce low. (Ariz. Coop. Sur.). NEW MEXICO - Occasional larva being found in lettuce fields in Mesilla Valley; no appreciable damage. (N. M. Coop. Rpt.). VIRGINIA - Numerous on Eastern Shore. (Hofmaster). MARYLAND - Damaging commercial spinach crop in Glenarm area, Baltimore County. (U. Md., Ent. Dept.). DELAWARE - Larvae on carrots in southern New Castle County, causing light injury. (Burbutis, Mason).

IMPORTED CABBAGEWORM (Pieris rapae) - OREGON - Adult activity favored by warm weather, permitting egg deposition, resulted in larval infestations of broccoli and cauliflower in Gresham, Woodburn and Hillsboro areas during late September. (Hanna). VIRGINIA - Numerous on Eastern Shore, although practically nonexistent the previous week. (Hofmaster).

DIAMONDBACK MOTH (Plutella maculipennis) - VIRGINIA - Larvae common on broccoli on Eastern Shore. (Hofmaster).

BEEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - In San Diego County, heavy on celery in Lemon Grove area and medium on peppers in Spring Valley. (Cal. Coop. Rpt.).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Heavy on tomato at Chula Vista, San Diego County. (Cal. Coop. Rpt.).

TOMATO FRUITWORM (Heliothis zea) - COLORADO - Eggs average 6.6 per 100 tomato leaves in Bent, Crowley, Otero, Prowers and Pueblo Counties; about 13 percent of eggs parasitized. (Colo. Ins. Sur.). VIRGINIA - Common on broccoli on Eastern Shore. (Hofmaster).

BLACK CUTWORM (Agrotis ipsilon) - COLORADO - Larval damage to potato tubers in Weld County; 10-15 percent of tubers in some areas of fields unmarketable. (Colo. Ins. Sur.).

GREEN PEACH APHID (Myzus persicae) - IDAHO - Large alate populations in vicinity of potato fields in Bingham and Caribou Counties, week ending September 30. Averaged 100 per leaf in field near Grace, Caribou County, resulting in death of considerable plants. Similar situation occurred recently in field south of Aberdeen, Bingham County. (Bishop). UTAH - Populations increased in late season before harvest of late potatoes in northern portion of State. (Knowlton).

CABBAGE APHID (Brevicoryne brassicae) - OREGON - Alates migrating into broccoli and causing scattered infestations in Gresham area, Multnomah County, September 25. (Hanna). DELAWARE - Abundant on some nearly mature cabbage plants in central Kent County. (Burbutis, Mason).

APHIDS - OKLAHOMA - Several species medium to heavy on turnip, mustard, cucumber and other crops in localized areas in southern half of State. (Okla. Coop. Sur.).

HARLEQUIN BUG (Murgantia histrionica) - VIRGINIA - Common in some areas of Eastern Shore on broccoli. (Hofmaster).

SQUASH BUG (Anasa tristis) - NEW MEXICO - Large numbers of adults and nymphs congregating on winter squash in Dona Ana County fields. (N. M. Coop. Rpt.).

WHITEFLIES - MARYLAND - Immature forms of unspecified species abundant on beans at Hurlock, Dorchester County. (U. Md., Ent. Dept.).

FLEA BEETLES - OHIO - Larvae of unspecified species sufficiently damaged 15 acres of turnips to make them unsaleable. A soil insecticide was used in the spring of 1960 as well as in spring of 1959. This is second instance of serious larval damage in a commercial turnip field where a soil insecticide had been used. (Wilson, Holdsworth).

RASPBERRY CANE BORER (Oberea bimaculata) - TEXAS - Larvae causing light damage to blackberry vines in Brazos County. (Alex).

#### COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARKANSAS - Two larvae found in gin trash in St. Francis County in east central area. This is first record for this year and for this county. (Ark. Ins. Sur.). ARIZONA - Through October 7, no specimens found in central area. In Graham County, which was not in treatment area, field infestations found as follows: Solomon area - 5 fields infested, 400-600 bolls checked in each field, with a total of 20 larvae taken; Safford area - 2 fields infested, 4 larvae taken in 2 fields from a total of 1,300 bolls. (Ariz. Coop. Sur.). NEVADA - Green boll survey negative in Pahrump Valley, Nye County. (Coop. Rpt., Sept. 30).

BOLLWORMS (Heliothis spp., et al.) - NEVADA - Number of infested and/or damaged bolls in Pahrump Valley, Nye County, extremely light in comparison with other cotton-growing areas, but equaled 1959 high for State. (Coop. Rpt., Sept. 30).

CABBAGE LOOPER (Trichoplusia ni) - LOUISIANA - Infestations scattered in northwest fields; larvae heavily diseased. (Spink).

COTTON LEAFWORM (Alabama argillacea) - LOUISIANA - Heavy in several fields in Caddo Parish; larvae ranged 1-6 per plant in one field. Large flights of adults also noted. (Spink). SOUTH CAROLINA - First adult trapped at Clemson on September 27; no damage to cotton expected. Defoliation of cotton at this stage would be beneficial. (Nettles et al., Sept. 28).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Populations continue high in many cotton fields in central and southwestern areas. (Ariz. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - NEVADA - Moderate to heavy in several fields in Pahrump Valley, Nye County. (Coop. Rpt., Sept. 30).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) - IDAHO - Damage located on 140 acres in Fern Creek, northeast of Lowman, Boise County. Infested trees to be salvaged before spring emergence. New infestation exists on land administered by Bureau of Land Management northwest of Bannock Peak, Power County. Previous damage inconspicuous; infestation appears confined to Swede Canyon. Control by logging and supplemental use of insecticide being considered. Trend of infestations is upward throughout many areas. (Furniss).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - OKLAHOMA - Live larvae and pupae infesting 44 percent of tips of pines checked in Stillwater area; of these, 69 percent were pupae, 31 percent larvae. (Okla. Coop. Sur.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - VIRGINIA - Light and spotted on loblolly pine in Fluvanna County. Attacking small pines in Duffield section, Scott County; causing considerable damage to young stock in memorial settings on school grounds. (Watts, Tarpley, Moore; Sept. 28). MARYLAND - Infesting Scotch pine at Sparks, Baltimore County. (U. Md., Ent. Dept.). WEST VIRGINIA - Caused heavy defoliation of Virginia pine in one area of Monongalia County. (W. Va. Ins. Sur.).

A PINE APHID (Essigella californica) - CALIFORNIA - Infesting yellow pine in Paradise, Butte County. (Cal. Coop. Rpt.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - NEW MEXICO - Galls extremely numerous on Colorado blue spruce in area near Black Lake, Colfax County. (N. M. Coop. Rpt.).

BALSAM TWIG APHID (Mindarus abietinus) - UTAH - Damaging fir trees locally in Logan Canyon and on summit of Wellsville Mountains in northern portion of State. (Knowlton).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NEW MEXICO - Spotty infestations found in several areas in Carson National Forest in Colfax, Taos, Mora and San Miguel Counties. (N. M. Coop. Rpt.).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - WEST VIRGINIA - Moderate to heavy on various hosts in central and southern counties. (W. Va. Ins. Sur.).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Defoliating red, white, black and post oaks in Pushmataha County. (Okla. Coop. Sur.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Damaging shade trees throughout central, north central and northeastern areas. (Okla. Coop. Sur.).

HICKORY HORNED DEVIL (Citheronia regalis) - WEST VIRGINIA - Abundant on hardwoods in Kanawha County. (W. Va. Ins. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - VIRGINIA - Common on pines, hemlock, arborvitae and other evergreens in all sections of Wythe County. (Bird, Sept. 28).

LEAF CRUMPLER (Acrobasis indigenella) - CALIFORNIA - Larvae heavy on cotoneaster in San Diego, San Diego County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Myzocallis ulmifolii exceptionally heavy on street and ornamental elms in Sacramento, Sacramento County. Honeydew so heavy that sidewalks and streets are gummy; sooty mold developing and some souring. This is late in season for heavy populations of this aphid. (Cal. Coop. Rpt.). NEVADA - Periphyllus negundinis moderate to heavy on boxelder in Reno-Sparks, Washoe County. Various species also moderate to heavy on ornamental shrubs and flowers in southern portion of county. (Bechtel et al., Sept. 30). MARYLAND - Melanocallis caryaefoliae injurious to hickory foliage at Bethesda, Montgomery County. (U. Md., Ent. Dept.).

AZALEA LACE BUG (Stephanitis pyrioides) - VIRGINIA - Widespread on azaleas at Manassas, Prince William County. (Trenary, Tarpley; Sept. 23).

COCCIDS - NORTH CAROLINA - Ceroplastes sp. infesting chrysanthemum, rose, crab-apple, apple, camelia and other plants in Bertie County. (Jones, Farrier). TEXAS - Icerya purchasi heavy on pittosporum in Comanche County (Dixon) and moderate to heavy on mimosa and pittosporum in Bryan-College Station area, Brazos County. (Newton). MARYLAND - Lepidosaphes ulmi heavy on street maples at several Prince Georges County localities. (U. Md., Ent. Dept.).

A SEED CHALCID (Eumegastigmus transvaalensis) - CALIFORNIA - Medium in berries of California peppertree (Schinus molle) in San Diego, San Diego County. This is first record for the State and for North America. Collected by R. Rinder. Det. by B. D. Burks and confirmed by British Museum. (Cal. Coop. Rpt.).

A WHITEFLY - ALABAMA - Heavy infestations of an unspecified species found on ornamentals in the Selma area of Dallas County. (Granberry).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - IDAHO - Severe on Cornus florida at Orofino, Clearwater County. (Portman, Sept. 30).

#### INSECTS AFFECTING MAN AND ANIMALS

RED TICK (Rhipicephalus evertsi evertsi) - FLORIDA - Found for first time in North America at Boca Raton, Palm Beach County. Specimens found in area of approximately 160 acres in animal compound ("Africa U.S.A."). The species is a carrier of several exotic diseases, including cattle fever, which has been identified from North America. (Anim. Dis. Erad. Div., Oct. 4).

EAR TICK (Otobius megnini) - SOUTH DAKOTA - Still being found on untreated native cattle in herd near Porcupine. This is the original herd where the tick was first discovered. (Hantsbarger).

A TICK (Dermacentor sp., probably albipictus) - OKLAHOMA - Heavy, 100 larvae and nymphs per animal, on 10 head of range cattle checked in Pushmataha County. (Okla. Coop. Sur.).

BLACK WIDOW SPIDER (Latrodectus mactans) - UTAH - Several found recently about homes at Logan, Cache County. (Knowlton).

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - New infestations by parish were as follows: Franklin - 8; Rapides - 1; Red River - 3; Richland - 2. (Spink). OKLAHOMA - Continued to cause concern in Haskell, Stephens and Jefferson Counties. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - VIRGINIA - Survey during period September 26-29 gave negative results in Bedford, Appomattox, Prince Edward, Buckingham, Powhatan, Hanover, Goochland, Dinwiddie, Brunswick and Lunenburg Counties. (Tarpley). NORTH DAKOTA - Surveys now underway to determine distribution within State. (N. D. Ins. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Counts averaged 40 per animal on 70 head of beef cattle checked in Pushmataha County. Continued to cause concern in McCurtain County and to enter major buildings in increasing numbers in Stillwater area. (Okla. Coop. Sur.). SOUTH DAKOTA - Populations abundant in eastern part of State. (Hantsbarger).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Heavy, 15 per animal, on 70 head of beef cattle in Pushmataha County. Populations increasing in Payne County area. (Okla. Coop. Sur.).

HORN FLY (Siphona irritans) - OKLAHOMA - Populations ranged 100-300 per animal on most range cattle in north central and northeast areas. Counts averaged 600-750 per animal on 100 head of range cattle in Pushmataha County and continued to cause concern in Muskogee, Haskell, McCurtain, Choctaw, Atoka, Seminole, Love, Stephens and Pawnee Counties. (Okla. Coop. Sur.).

HORSE BOT FLIES (Gasterophilus spp.) - OKLAHOMA - Medium to heavy egg laying noted on horses in north central and northeast areas. Somewhat lighter than noted at same time in 1959. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Populations of several species continue to decline in northeast and east central areas. Counts averaged 5-6 per animal on 100 head of range cows in Pushmataha County. Continued to cause concern in Seminole and Choctaw Counties. (Okla. Coop. Sur.).

MOSQUITOES - OKLAHOMA - Unspecified species causing annoyance to residents in eastern half of State. (Okla. Coop. Sur.). DELAWARE - Psorophora ciliata adults quite common statewide. (Burbutis, Mason).

FLEAS - TENNESSEE - Quite common around homes over State. (Mullett).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Heavy, averaged 45 per animal, on 10 head of hogs in Pushmataha County. (Okla. Coop. Sur.).

FUSS CATERPILLAR (Megalopyge opercularis) - SOUTH CAROLINA - Stung man at Easley; specimen determined on September 26. Victim had cardiac spasm of some four hours duration and ill for a 24-hour period. (Nettles et al., Sept. 28).

SADDLEBACK CATERPILLAR (Sibine stimulea) - TENNESSEE - Many complaints of stings coming in from over the State. (Mullett).

#### STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - ARIZONA - New infestation found in Phoenix area, Maricopa County; treatment being applied. This is only known infestation in State. (Ariz. Coop. Sur.). NEW MEXICO - No infestations found. (N. M. Coop. Rpt.).

DERMESTIDS (Trogoderma spp.) - NEW MEXICO - Unusually large numbers of T. sternale, T. plagiifer, T. parabile and T. inclusum being found. (N. M. Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - IDAHO - Infesting a farm grain elevator and a commercial feed mill in Bingham County. (Bishop, Sept. 30).

COWPEA WEEVIL (Callosobruchus maculatus) - NEW MEXICO - Adults extremely numerous on sacks of black-eyed peas in seed room of a property at Texico, Curry County. (N. M. Coop. Rpt.).

A CAMEL CRICKET (Ceuthophilus sp.) - NORTH CAROLINA - Feeding on stored potatoes in Beaufort County. (Chesnutt, Farrier).

#### BENEFICIAL INSECTS

A NYMPHALID (Precis coenia) - NORTH CAROLINA - Larvae feeding on witchweed in Hoke County. (Chadwick, Farrier).

LADY BEETLES (Hippodamia spp.) - WYOMING - Adults averaged 5 per 25 sweeps in alfalfa in Laramie County. (Fullerton). OKLAHOMA - H. convergens ranged 0.2-1.0 per sweep in alfalfa. (Okla. Coop. Sur.).

NABIDS (Nabis spp.) - WYOMING - Averaged 10 adults per 25 sweeps in alfalfa in Laramie County. (Fullerton).

LACEWINGS (Chrysopa spp.) - OKLAHOMA - Ranged 0.5-1.5 per sweep in alfalfa; most common predator noted. (Okla. Coop. Sur.).

FLOWER BUGS (Orius spp.) - WYOMING - Adults averaged 6 per 25 sweeps in alfalfa and 10 per 25 sweeps in sugar beets in Laramie County. (Fullerton).

A UROPODID MITE (Fuscuropoda marginata) - MARYLAND - Immature forms on several Japanese beetles collected at Rising Sun, Cecil County. Det. by E. W. Baker. (U. Md., Ent. Dept.).

#### MISCELLANEOUS INSECTS

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - KENTUCKY - One specimen found on September 23 by R. B. Owens in Fulton, Fulton County, along railroad on Kentucky side of Kentucky-Tennessee border. Determination confirmed on September 29 by D. M. Weisman. Eradicative measures to be undertaken and additional delimiting surveys underway. (L. H. Townsend). This is the first record in the State. (PPC).

AN EMBIOPTERAN - OKLAHOMA - Unidentified species collected in a native grass-weed-mesquite pasture near Loveland, Tillman County. According to locally available records, this is the first time this order has been collected in the State. (Okla. Coop. Sur., Sept. 24). There are no ARS records of this order from the State. (PPC).

BLISTER BEETLES (Epicauta spp.) - ALABAMA - E. pestifera and E. pennsylvanica plentiful in Auburn area, Lee County; heaviest infestations found on goldenrod. E. pestifera plentiful at Jackson, Clarke County. (Guyton).

CIGARETTE BEETLE (Lasioderma serricorne) - MARYLAND - Adults common in kitchens of several homes in Baltimore. (U. Md., Ent. Dept.).

A CURCULIONID (Trachyphloeus bifoveolatus) - OREGON - Of concern to some homeowners in Portland area of Multnomah County. (Miller).

FALSE POTATO BEETLE (Leptinotarsa juncta) - ALABAMA - Plentiful at Jackson, Clarke County. (Guyton).



BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Entering homes and causing a nuisance at several localities in Washington County. (U. Md., Ent. Dept.).

COCKROACHES - VIRGINIA - Blattella germanica reported as difficult to control in Brodnax, Brunswick County, and Fredericksburg, Stafford County. (Beck, Rowell; Sept. 26). DELAWARE - Several new infestations of Blatta orientalis in homes in New Castle County. (Burbutis, Mason).

AN EARWIG (Labidura riparia) - CALIFORNIA - Present on a nursery property in Hemet, Riverside County. (Cal. Coop. Rpt.).

HARVESTER ANTS (Pogonomyrmex spp.) - NEW MEXICO - Hills very abundant in several areas in San Miguel and Lincoln Counties. Averaged over 40 hills per acre in 1 small area near Pecos, San Miguel County. (N. M. Coop. Rpt.).

AN EARTHWORM MITE (Fuscuropoda agitans) - CALIFORNIA - Infestations of this species and Tyroglyphus sp. heavy in earthworm beds in Parlier, Fresno County. (Cal. Coop. Rpt.).

#### CORRECTIONS

CEIR 10(38):881 - A CERAMBYCID (Crossidius pulchrus) should read (Crossidius pulchellus).

CEIR 10(41):948 - GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Fourth sentence should read "It appears likely that the male moth found in 1959 near Harrisburg, Perry County, was transported by vehicle as an immature form from an area outside of the State."

CEIR 10(41):950 - SADDLEBACK CATERPILLAR (Sibene stimulea) should read (Sibine stimulea).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Perid. saucia	Prod. ornith.	Protoparce sexta	quinq.	Helio. zea
<b>ARIZONA</b>								
Mesa 9/26-10/2					182			37
<b>ARKANSAS</b>								
Hope 9/29-10/5	21		4					37
Morrilton 9/29-10/5	18		8					76
Kelso 9/29-10/5	23							76
Fayetteville 9/29-10/5	16							15
<b>FLORIDA</b>								
Quincy 9/26			2					39
Gainesville 9/15,20,27	4		5	9		4		30
<b>INDIANA (Counties)</b>								
Lawrence 9/13-15,20-23	7				4	11	17	27
Tippecanoe 9/29-10/6	2		1					4
Vanderburgh 9/22-29	5		2		7		1	136
<b>LOUISIANA</b>								
Baton Rouge 9/30-10/6	11	159	4		37			25
Franklin 10/3	7	7	5		4			1
<b>MISSISSIPPI</b>								
*Stoneville 9/30-10/6	156	649	32	10	93	9		392
<b>NEBRASKA</b>								
Lincoln 10/1-7	6			4				44
Alliance 9/22-30	58	2	13	2				21
Scotts Bluff 9/15-28	79		52	22			1	18
North Platte 9/28-10/5	296	13	62	15				114
Bushnell 9/20-29	45		5	3				4
<b>SOUTH CAROLINA</b>								
Clemson 10/1-7	36	115	3	4	30			19
Charleston 9/26-10/2	9	19	7		8	10	2	139
<b>TENNESSEE (Counties)</b>								
Monroe 9/26-10/3	48		20	4	16		4	116
Maury 9/26-10/3	24				4	2	4	128
Robertson 9/26-10/3	20				24		20	64
Cumberland 9/26-10/3	24	4			8	8	24	84
Greene 9/26-10/3	18	16	20	8	32	6	8	120
Blount 9/26-10/3	56					4	8	56
Johnson 9/26-10/3	60	36	32	22	182			48
<b>TEXAS</b>								
Waco 10/1-7	218			77	51			313

Additional Collection

ARIZONA - (Mesa 9/26-10/2); Spodoptera exigua - 1,422.

\*Two traps - Stoneville

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES <sup>1/</sup>

1959

ORNAMENTAL AND SHADE TREE INSECTS

Ornamental Insects: Of the lepidopterous species infesting ornamentals during the 1959 season, BAGWORM (Thyridopteryx ephemeriformis) was the most frequently reported and the most widespread. Two infestations on juniper were reported in the Fargo area of Cass County, North Dakota. Bagworm defoliated and caused death of junipers in Kansas, while populations in Oklahoma were considerably heavier during 1959 and caused extensive damage to untreated evergreens over most of the State. The pest was also heavier than usual in Arkansas, causing severe defoliation of some ornamental plantings. Although widespread in Illinois, bagworm caused damage only in isolated areas. The pest was not as common in Indiana as in the recent past, but continued to be important in some areas of the State on evergreens and deciduous trees. The decrease in Indiana is contributed to severe winter conditions. In Ohio, the species was also less numerous during 1959 than during the past 2 years. Bagworm was moderate to heavy on arborvitae in Georgia and heavily infested cedar trees in Franklin and West Carroll Parishes, Louisiana, during July. The pest was of importance on ornamental evergreens over Virginia during 1959 and somewhat below normal on the same hosts in Maryland. The species was generally abundant in New Jersey during 1959, causing injury mainly to arborvitae.

Two other psychids were also reported as infesting ornamentals. Oiketicus townsendi heavily infested arborvitae in several areas of Chaves County, New Mexico, during September. In Utah, Apterona crenulella again infested outdoors of a few homes in northern areas, as well as attacking foliage of ornamentals and fruit trees about homes. Damage to range plants by this psychid in Cache, Box Elder, Rich, Summit and Weber Counties was below average during 1959.

AZALEA LEAF MINER (Gracilaria azaleella) and LILAC LEAF MINER (G. syringella) were heavy locally in Washington County, Rhode Island, in mid-July and early August, while severe infestations of SOLITARY OAK LEAF MINER (Cameraria hamadryadella) caused much concern for oaks in ornamental situations over the State during 1959. Lilac leaf miner was very abundant in Montana, east of the mountains, during 1959.

STRIPED GARDEN CATERPILLAR (Polia legitima) was reported as a new State record for Florida during 1959. Larvae were collected on goldenshower senna (Cassia fistula) November 6, 1955, at Gainesville, Alachua County. Determination was made by H. W. Capps. Infestations of IRIS BORER (Macronoctua onusta) in iris were numerous in central and southern sections of Maryland during 1959. Larvae of a NOCTUID (Arzama sp.) were collected from calladium bulbs in storage in Florida; about 2 acres were reported infested upon digging of bulbs at Lake Placid, Highlands County, on January 8. Adults of another noctuid, Melipotis acontioides, were collected at lights on Key Largo, Monroe County, on January 30 and all females were found to be gravid. Larvae of this noctuid were reported defoliating royal poinciana (Delonix regia) at Key West on January 29, which was the first report of damage for 1959. This species was not reported to be as serious in 1959 as it was in 1958. In North Carolina, an unusual infestation of Xanthopastis timais, another noctuid, fed on flowers in early June in Columbus County.

Larvae of PAINTED-LADY (Vanessa cardui) fed on caragana hedge in Judith Basin County, Montana, during 1959, while MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) caused approximately 2 percent defoliation of bitterbrush (Purshia tridentata) in the Pine Creek-Keithley Creek drainage of Washington County, Idaho, during late May and early June. Two other NYMPHALIDS were reported as damaging during 1959. In Kansas, larvae of Asterocampa celtis were present in large numbers on hackberry

<sup>1/</sup> Including all reporting states except Hawaii and Alaska, which were carried in CEIR 10(4):46 and CEIR 10(6):74, respectively.

in the western part of the State and in moderate numbers in the eastern portion. Agraulis vanillae defoliated passionvines in Marin and Santa Clara Counties, California.

LEAF CRUMPLER (Acrobasis indiginella) webbed 30 percent of the pyracantha plantings in Dare County, North Carolina, and was also reported from nearby Camden County. Another PHYCITID (Euzophera sp., ostricolorella or near) cut the cambium and killed magnolia trees less than 4 inches in diameter in Mecklenburg County of the same State, but adults could not be reared for definite determination.

UGLY-NEST CATERPILLAR (Archips cerasivoranus) fed on caragana in north central and on ornamentals in western Montana, while a BOXELDER LEAF ROLLER (A. negundanus) caused light local damage in Utah. Larvae of OMNIVOROUS LEAF ROLLER (Platynota stultana) were reported as serious on carnations in the Bradenton area of Manatee County, Florida, on April 15, and another LEAF ROLLER (Platynota sp.) caused some damage to azaleas in nurseries in St. Tammany Parish, Louisiana.

Several other lepidopterous species were reported from various sections of the Nation as either infesting or damaging a variety of ornamentals. DOGWOOD BORER (Thamnosphesia scitula) was found infesting several dogwoods during the 1959 season in New Castle County, Delaware, with larvae apparently mature by the third week in July. The species was widely spread on ornamentals in New Jersey, but no more serious than in previous years. CHAIN-SPOTTED GEOMETER (Cingilia catenaria) larvae were again abundant during 1959 on a variety of brush and tree species on Conanicut Island and at Matunuck on the Rhode Island mainland. They caused concern invading home plantings, where they fed on practically all plants. There was a general buildup of ARBORVITAE LEAF MINER (Argyresthia thuiella) in Vermont during 1959.

EASTERN TENT CATERPILLAR (Malacosoma americanum), after exhausting available food supply in Richmond County, North Carolina, especially in the city of Rockingham, migrated to ornamentals. In South Carolina, STINGING ROSE CATERPILLAR (Parasa indetermina) was collected from dogwood at Pendleton, Anderson County, on August 28 for a new State record. Determination was made by H. W. Capps. The first record of EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) for the Pacific coast states was recorded from Washington on ornamental red pine at Bellevue, King County, and was later found at Sumner, Pierce County.

An AMATID MOTH (Lymire edwardsi) damaged Ficus sp. in the southern portion of Florida during January and was especially heavy on strangler fig (F. aurea), with many trees being defoliated. It also attacked Ficus sp. during March. A WEBWORM (Tetralopha militella) was reared from American planetree in the Gainesville area of Alachua County during May for a new Florida record. The species was determined by C. P. Kimball. This species was also very injurious to foliage of London planetree in one area of Sussex County, Delaware, during July. A PYRAUSTID (Asciodes gordialis) became active in southern Florida in April and caused severe damage to bougainvillea in some areas. Also in Florida, an OLEANDER CATERPILLAR (Syntomeida epilais jucundissima) was abundant and completely defoliated plants wherever oleander was found. Little control was done for this pest which is generally distributed throughout the summer. A SEAGRAPE BORER (Hexeris enhydris) was quite active in coastal areas of Florida, especially in Dade County during April, with most damage being noted in nurseries near Everglades, Collier County. A large infestation of this borer (2,000 per 2,500 plants) was found on Merritt Island, Brevard County, on June 12.

Several species of Coleoptera were reported during the 1959 season as infesting and/or damaging to ornamentals. The most frequently reported of these was JAPANESE BEETLE (Popillia japonica). In Rhode Island, adults of this scarabaeid were first observed on July 1. A heavy emergence from a new lawn occurred in Warwick, Kent County, and there were localized emergences in North and South Kingstown, Washington County. The species was of moderate importance in the State during 1959. Infestations of Japanese beetle were heavier in New Jersey during

1959 than they have been for the past several years. Adults were first noted in Delaware on June 8 in New Castle County. Large numbers and heavy feeding injury occurred during June and early July on wild cherry, peach, mimosa and roses. In Maryland, Japanese beetle adults caused somewhat less concern during 1959 than during 1958 in all sections on ornamentals. The pest was a problem on various ornamentals during 1959 in infested areas of Virginia. Additional infestations were found in one area each in Wise and Floyd Counties. Japanese beetle was of general importance in North Carolina during emergence, which occurred during late May in southeastern counties and during late June in western counties. In Georgia, the pest was reported from Richmond County.

The adult population of Japanese beetle in Ohio was much lower than in 1958; however, the fall grub population was greater than that of 1958. Although many new locations of Japanese beetle infestation were found in Indiana during 1959, populations in established areas were lower than for several years. In Newton County, adults were sparse on smartweeds in the area where they have been abundant in past years. High temperatures during July and August and lack of soil moisture possibly reduced activity, especially egg laying. By October 1, most larvae were still in the first and second instar. New locations of infestation included Seymour, Montezuma and Crawfordsville. In Wisconsin, 1,000 bait traps were set out in 9 different counties at possible sites of entry, but no Japanese beetles were taken in these traps during 1959.

A CUBAN MAY BEETLE (Phyllophaga bruneri) was discovered during June at Miami, Florida, for a new United States record. This species was previously known only from Cuba, where it was described. See CEIR 10(4):47-49, for additional information on this species. Grubs of NORTHERN MASKED CHAFER (Cyclocephala borealis) caused heavy injury to lawns in some Maryland suburban areas. Heavy flights of ASIATIC GARDEN BEETLE (Autoserica castanea) to lights appeared in Washington County, Rhode Island, in Kingston and Narragansett on July 13. Adults of ROSE CHAFER (Macrodactylus subspinosus) were moderate in the State during 1959, first being observed on roses June 4.

There was a heavy emergence of BLACK VINE WEEVIL (Brachyrhinus sulcatus) in a nursery in Washington County, Rhode Island, on June 24, while injury from this pest was present in localized areas of New Jersey during 1959. A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) occasionally injured foliage of azaleas and other ornamentals in Montgomery, Prince Georges and Wicomico Counties, Maryland. ROSE CURCULIO (Rhynchites bicolor) was damaging to roses in Utah during the 1959 season.

Populations of a WILLOW FLEA BEETLE (Altica sp.) appeared to be at about normal levels throughout the northern part of Idaho during the summer of 1959. Oviposition of a WILLOW LEAF BEETLE (Chrysomela sp., probably scripta complex) in Idaho was noted on June 5 near Porthill in Boundary County, with fairly large numbers of adults noted on marshland willows in that area during late June. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) became exceedingly abundant and destructive in Indiana late in the season, causing injury to many varieties of flowers. PINE COLASPIS (Colaspis pini) caused severe damage to spruce and loblolly pine used as ornamentals in East Baton Rouge and Livingston Parishes, Louisiana. In Florida, BANDED CUCUMBER BEETLE (Diabrotica balteata) damaged hibiscus flowers in nurseries during April in Miami, Dade County; while another CHRYSOMELID, Maecolaspis favosa, was reported throughout the State during 1959 as damaging crapemyrtle, cuphea, ixora, waxmyrtle and punk-tree foliage and was of economic proportions on ixora in several areas. Adults of ROSE LEAF BEETLE (Nodonota puncticollis) were very abundant on roses in New Castle County, Delaware, during 1959, causing rather heavy feeding injury in some sections. Grubs, probably ROUNDHEADED APPLE TREE BORER (Saperda candida) were rather common during May, with serious injury on ornamental hawthorn in Kennebec County, Maine. Another CHRYSOMELID, Mantura chrysanthemii, was found on sorrel in the Monmouth area of the same county, for a first record of this species in Maine.

BRONZE BIRCH BORER (Agrilus anxius) continued to be the most serious pest of birch trees in home plantings in Minnesota. A BOSTRICHID (Sinoxylon conigerum) was collected boring in sapodilla (Achras sapota) in Florida at Miami, Dade County, on August 10, 1959, and determined by T. J. Spilman. The pest has been intercepted many times at ports of entry, but this report appears to be the first record of the establishment of the species in the United States. Specimens of a SEED BEETLE (Caryoborus serripes) were found December 3, 1958, at Miami and were subsequently determined by P. J. Spangler as this species. This is a South American species known from Brazil, French Guiana, Bolivia and Venezuela, where it is found in seeds of palms of the genera Astrocaryum and Maximiliana. Although C. serripes has been intercepted a number of times at ports of entry, it is not known to be established in the United States. The Miami specimens were taken from 2 types of palm seeds which had been imported for oil extraction. Although these seeds had been fumigated with methyl bromide, live adults were collected at a later date. All seeds remaining were destroyed by burning.

A JUNIPER BARK BEETLE (Phloeosinus dentatus) occurred in a majority of Juniperus virginiana growing on an estate in Rhode Island. The concentration of the beetles developed from trees that had been killed the previous season and after cutting, had been stacked on the premises. The newly attacked trees were fading by mid-May. In South Dakota, this juniper bark beetle damaged ornamental junipers in Stanley and Haakon Counties. A NITIDULID (Conotelus mexicanus) damaged flowers and was a nuisance in gardens in many areas of New Mexico. Another NITIDULID, Meligethes nigrescens, reached heavier numbers than have been found for the past 4 years in the Willamette Valley of Oregon on many ornamental flowers. Several species of RANGE INSECTS, especially Coleoptera, affected shrubs in Nevada and were above normal in numbers and caused extensive damage.

Several species of APHIDS were reported from various States as infesting ornamentals during 1959. Among these was Mastopoda pteridis, which was collected on bracken fern (Pteridium aquilinum) at Ft. Pierce, St. Lucie County, Florida, on October 21, 1958, and reported as first record for that State during 1959. COOLEY SPRUCE GALL APHID (Chermes cooleyi) caused moderate damage to ornamental spruce in Kennebec County, Maine, during May, and was unusually abundant in a Washington County nursery, Rhode Island, and locally elsewhere in the State. PINE BARK APHID (Pineus strobi) became a problem in several nurseries in the northern part of Minnesota; chemical treatments were required.

An ARBORVITAE APHID (Cinara tujaefilina) was reported as infesting arborvitae in several states. The aphid was common on stems of arborvitae during March and again in October in northern Kent County, Delaware; however, no alate forms were found. In Florida, large populations were present on Thuja sp. during January at Tampa and Plant City, Hillsborough County. Infestations of C. tujaefilina were heavy on arborvitae during the early summer in most of New Mexico, while some severe infestations were reported on arborvitae shrubs in the Caldwell area of Canyon County, Idaho, during early July.

BOXELDER APHID (Periphyllus negundinis) heavily infested boxelder trees at Carlsbad, Eddy County, and at Tucumcari, Quay County, during May and June; while in Utah, it was often very abundant, causing trees to be very sticky. Infestations of boxelder aphid were unusually severe in Nevada during 1959; leaves were stunted and yellow, and large amounts of honeydew covered the ground beneath the trees. GREEN PEACH APHID (Myzocallis persicae) also occurred in above normal numbers in Nevada on ornamental Prunus. Also in Nevada, various unspecified species of aphids were numerous and common pests in home flower gardens during 1959. Species occurring in above normal numbers on various ornamentals included Cinara sp. on juniper, Myzocallis robiniae on locust trees; and Periphyllus populicola, Pemphigus spp. and Thecabius spp. on poplars.

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni) was found in large numbers on chrysanthemums in only one area of Kent County, Delaware, during 1959, while CRAPEMYRTLE APHID (Myzocallis kahawaluokalani) was unusually abundant on crape-

myrtle in central Piedmont counties of North Carolina during the 1959 season. In Wyoming, PEA APHID (Macrosiphum pisi) was very abundant on many shrubs during August. An OLEANDER APHID (Aphis nerii) was very heavy on oleander in Arizona during April and May, and several different species were heavy on ornamentals and commercial rose plantings in central and southeastern portions of the State during the spring months. Infestations of POTATO APHID (Macrosiphum euphorbiae), ROSE APHID (M. rosae) and Amphorophora nervata were heavy on roses in the spring in New Mexico. TULIP BULB APHID (Anuraphis tulipae) infestations were heavy on iris plants during early summer in Dona Ana, Luna, Lea and Eddy Counties of the same State. Severe infestations of ROSE APHID were reported on roses in Latah County, Idaho, during early June and in Aberdeen, Bingham County, and in Twin Falls, Twin Falls County, during July. Several aphid species were injurious to ornamentals over Utah, particularly during the spring; while in Maryland, various species gave considerable trouble on rose, flowering quince, chrysanthemum, pyracantha, tulip-poplar, oak and pine.

Two new species of WHITEFLIES were collected in Florida during 1959; Dialeurodes n. sp. on holly (Ilex opaca) at Lake Mary, Lake County, February 6, and Tetraleurodes n. sp. on fiddlewood (Citharexylum fruticosum) in the Everglades National Park, Dade County, during April. Specimens of a whitefly (Odontaleurodes rhododendri) collected on azalea (Rhododendron sp.) at Leesburg, Lake County, on January 20, 1959, constitute a new Florida record for this species; while specimens of another whitefly, Aleyrodes spiraeoides, collected on Iris sp. at Tallahassee, Leon County, on April 10, not only constitute a new record for Florida, but also the first record of this species in eastern United States.

A heavy infestation of BOXELDER PSYLLID (Psylla negundinis) on boxelder was reported at Williston, Williams County, North Dakota, and numbers of this pest were moderate in Utah. BOXWOOD PSYLLID (P. buxi) occurred in noticeable numbers during 1959 in the Salem area of Oregon the week of April 26. In California, another PSYLLID (P. uncatoides) was a nuisance and damaged acacia trees in San Diego County and was also a nuisance to humans around infested trees. In Kansas, HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma) and a HACKBERRY BLISTER GALL (P. celtidis-vesicula) caused moderate to severe defoliation in midsummer. Hackberry nipple gall was also a minor problem in Minnesota, wherever hackberry trees are grown.

MEADOW SPITTLEBUG (Philaenus leucophthalmus) was present in heavier numbers than previously noted on shrubs and ornamentals in the north coast counties of California during 1959. Another SPITTLEBUG (Clastoptera arizonana) severely damaged acacia trees in San Diego, Orange, Los Angeles, Riverside and San Bernardino Counties, and is spreading rather rapidly in the State. In New Mexico, adults and nymphs of Clastoptera sp. were very abundant on chokecherry trees near Taos, Taos County. Two SPITTLEBUGS (C. proteus nigricollis and C. obtusa) were abundant on dogwood and ironwood trees in the Lafayette area of Tippecanoe County, Indiana, in early June. Adults of still another SPITTLEBUG (Tomaspsis bicincta) were fairly abundant on holly trees in New Castle County, Delaware, during the last week of July.

A THORNBUG (Umbonia crassicornis) was on the increase in Palm Beach County, Florida, on Acacia sp., Calliandra sp. and Pithecellobium sp. in January and continued abundant through April. ROSE LEAFHOPPER (Edwardsiana rosae) very conspicuously discolored foliage of cultivated roses throughout Utah during 1959, and wild roses were equally injured. This leafhopper also became numerous on spirea at Logan, Cache County, in the fall. Also in Utah, VIRGINIA-CREEPER LEAFHOPPER (Erythronia ziczac), E. elegans and other species again damaged Virginia creeper foliage during late summer and fall in many communities. Leaves were frequently killed before late August. Virginia-creeper leafhopper was also common on Virginia creeper in the eastern portion of Montana during 1959. Nymphs of an unspecified species of a FLATID PLANTHOPPER were abundant on shrubbery in the Coastal Plain of North Carolina.

COCCIDS were also of some concern during the 1959 season. In Maryland, COTTONY MAPLE SCALE (Pulvinaria innumerabilis) was of concern on dogwood and maple. FLETCHER SCALE (Lecanium fletcheri) was observed hatching in nurseries in the Barrington area of Bristol County and in Washington County, Rhode Island, about the first week of July. This scale was unusually abundant on yews, junipers and arborvitae throughout Indiana and was common on yews in most nurseries in Wisconsin. In Minnesota, the infestation level of Fletcher scale maintained a level similar to that of 1958. EUROPEAN FRUIT LECANIUM (Lecanium corni) remained a serious problem over most of Minnesota, especially in the Twin City area in Edina, Hopkins and St. Louis Park, and also damaged roses in Utah at Vernal, Uintah County. An outbreak of L. corni complex occurred on ornamentals in Whatcom County, Washington, during the spring of 1959.

In Louisiana, FLORIDA WAX SCALE (Ceroplastes floridensis) severely infested ornamentals in the New Orleans area. A MEALYBUG (Geococcus coffeae) was found in all stages on April 20 on ovalleaf peperomia (Peperomia obtusifolia) at Oviedo, Seminole County, Florida; a new county record and the second report of this species in Florida, being first reported from Apopka, Orange County, in 1958. The species has also been found on Schefflera sp., artillery fern (Pilea sp.) and neanthe palm. BROWN SOFT SCALE (Coccus hesperidum) damaged philodendron and BLACK SCALE (Saissetia oleae) was heavy on fiddleleaf fig at Alameda, Bernalillo County, New Mexico, while moderately heavy infestations of CITRUS MEALYBUG (Pseudococcus citri) damaged oleander at Albuquerque in the same county. Saissetia nigra damaged rubber plants in greenhouses in Roswell and Albuquerque. In Ohio, GRAPE MEALYBUG (Pseudococcus maritimus) ranked third in number of times pests were reported by nursery inspectors.

In Maryland, Leucaspis japonica caused concern on privet and holly, as did Ceroplastes sp. on hemlock and other hosts. Several coccid species were reported on ornamental plants over Virginia during the 1959 season. Other COCCIDS (Lecanium spp.) were more abundant than usual in Ohio. Reports of Aspidiotus spinosus from Ilex sp. in Tulsa County, Chrysomphalus albopictus from magnolia leaves in Oklahoma County and Pulvinaria acericola from persimmon in McCurtain County were all first records for Oklahoma during 1959.

EUROPEAN FRUIT SCALE (Aspidiotus ostreaeformis) was found infesting silktassel (Garrya sp.) in Ventura County, California, for a new State record as well as a new host record. SAN JOSE SCALE (A. perniciosus) was of concern on pyracantha in Maryland during the 1959 season, and was reported for the first time from the Twin Cities area of Minnesota. SCURFY SCALE (Chionaspis furfura) was a continuing problem and serious over most of Minnesota, especially in Edina, Hopkins and St. Louis Park in the Twin City area. As in the past, a CEDAR SCALE (Cryptaspidotus shastae) has become a lesser problem in Kansas now that the effects of the 1952-1956 drought are no longer a factor on insect problems. JUNIPER SCALE (Diaspis carueli) was more active than usual during 1959 in the southern Piedmont area of North Carolina and damaged ornamental junipers in several Utah localities.

OYSTERSHELL SCALE (Lepidosaphes ulmi) was severe on lilac in many areas of Rhode Island, crawlers being first observed the first week of June. Oystershell scale also caused damage to various species of shrubs and trees over Wyoming during 1959. PINE NEEDLE SCALE (Phenacaspis pinifoliae) was common on ornamental mugho pine and Australian-pine in Chittenden County, Vermont, during 1959, and the infestation was again general throughout Minnesota in some home plantings of spruces and pines. Pine needle scale was common on ornamental spruce in the southern half of Montana and damaged ornamental trees and shrubs throughout Wyoming during the 1959 season. WHITE PEACH SCALE (Pseudaulacaspis pentagona) occurred on many hosts over North Carolina during the year. EUONYMUS SCALE (Unaspis euonymi) was very abundant in New Jersey with 2 generations of crawlers present and caused concern in Maryland by infesting euonymus and bittersweet. Heavy populations of this scale damaged euonymus plants in many areas of New Mexico during the season. AZALEA BARK SCALE (Eriococcus azaleae) heavily infested



at least one rhododendron planting in Portland, Multnomah County, and several reports indicate that this pest may be on the increase in Oregon.

Nymphs of a ROYAL PALM BUG (Xylastodoris luteolus) were found on royal palms (Roystonea sp.) at Ft. Lauderdale, Florida. The first report of the 1959 season was made in June, when approximately 25 percent of the royal palms in this area were infested. Adults of BOXELDER BUG (Leptocoris trivittatus) were very numerous during July on roses in New Castle County, Delaware, and all stages were abundant during August and September on boxelders in Kent County. HACKBERRY LACE BUG (Corythucha celtidis) caused severe bleaching and considerable defoliation of hackberry during 1959 in Kansas; while unspecified species of LACE BUGS were a problem throughout the season in Maryland on azalea, hawthorn, rhododendron, oaks, pyracantha and sycamore.

CUBAN-LAUREL THRIPS (Gynaikothrips ficorum) was found infesting Ficus retusa on an El Cajon property in San Diego County, California. Subsequent inspections revealed light to heavy infestations of this species of Ficus in the city of San Diego and nearby towns, as well as in Tijuana, Mexico. This is the first record of this thrips in California. In Oregon, GLADIOLUS THRIPS (Taeniothrips simplex) infested about one-half acre of gladiolus near Silverton, Marion County; this is the heaviest infestation observed in 3 years. Gladiolus thrips caused normal damage to ornamental flowers in Utah during 1959, while another THRIPS, Frankliniella occidentalis, was again very abundant in cultivated and wild flower blossoms. Unspecified species also damaged roses in that State. Unspecified THRIPS were reported distorting terminal growth of lilac in a location in the Twin City area of Minnesota, which was the first known record in recent years of thrips causing injury to lilac.

An EARWIG (Pyragropsis buscki) was found May 11 on washingtonia palm (Washingtonia robusta) at Coral Gables, Dade County, Florida. All previous records are from coconut palms and the species is known from Cuba and Jamaica. It had been collected in Florida only twice before. Seventeen additional specimens were collected on coconut palm under old petiole bases where the brown fibers overlap. Collections were made at Crandon Park, Key Biscayne, Dade County, on October 27, 1959.

HOLLY LEAF MINER (Phytomyza ilicis) remains confined to those areas of Oregon where it was found during 1958, namely Portland-Gresham and Astoria. A HOLLY LEAF MINER (Phytomyza sp.) required controls in all areas of Rhode Island during 1959. NATIVE HOLLY LEAF MINER (P. illicicola) was apparently scarce in Delaware during the 1959 season and relatively few serpentine-like mines, typical of this species, were noted on the 1959 new growth during July. A new species of HOLLY LEAF MINER (near P. illicicola) was very abundant in sections of Sussex County, Delaware, and has also been found in other areas of the State. The blotch-like mines made by this new species are most noticeable during late March and April when larvae are completing development. By April 24 pupation was completed and most adults had emerged. Similar type mines, but smaller and containing younger larvae, were again present in November. Adults from these blotch mines emerge from the upper surface of the holly leaves; this habit is similar to P. ilicis.

First adults of NARCISSUS BULB FLY (Lampetia equestris) were observed in Washington on May 5 at Sumner, Pierce County. Adults were numerous on San Juan and Orcas Islands but not on Lopez Island, San Juan County. In Marin County, California, a TEPHRITID (Eutreta pacifica) caused heavy gall formation on second-year chrysanthemums, while in Sedgwick County, Kansas, a GALL MIDGE (Phytophaga celtiphyllia) produced many galls on the leaves and young twigs of hackberry in Wichita.

A SAWFLY (Profenusa canadensis) was locally heavy on hawthorn in North Kingstown, Washington County, and North Providence, Providence County, Rhode Island, in late May. Occurrence of BIRCH LEAF MINER (Fenusia pusilla) was general in Maine during

May, infestations and damage being moderate from the ornamental standpoint. Birch leaf miner was generally heavy on birch in nurseries throughout Wisconsin, but in natural stands infestation was not great. ROSE-SLUG (Endelomyia aethiops) damaged roses in Utah and had skeletonized the same host in the northern Piedmont of North Carolina by mid-May. Also in North Carolina, a CARPENTER BEE (Ceratina sp.) destroyed most of an 80-acre planting of roses in Mecklenburg County.

SPRUCE SPIDER MITE (Oligonychus ununguis) infested ornamental spruce at St. Patrick's Hospital in Missoula, Montana, during the 1959 season. Spruce spider mite and TWO-SPOTTED SPIDER MITE (Tetranychus telarius) continued to be the two most troublesome pests in nurseries in Ohio during 1959. Two-spotted spider mite became abundant on many flowering plants in Indiana during late summer, was severe on many evergreen plantings in Minnesota during the same period and damaged roses in Utah during the season. Unspecified species of SPIDER MITES were unusually heavy in Nevada on ornamental evergreens, such as juniper and spruce, and required more controls than usual; and heavy infestations were present on juniper, perennials and shrubs in many sections of North Dakota. Tetranychus spp. continued to develop and resulted in sporadic outbreaks in Nebraska; but, less than usual numbers were observed during 1959. A SPIDER MITE (Eotetranychus clitus) caused some damage to azaleas in nurseries in St. Tammany Parish, Louisiana, while several species of this group of mites were of primary importance on ornamentals during the 1959 season in Virginia. Unspecified species of spider mites were generally above normal on boxwood, spruce and other ornamentals in all sections of Maryland due to hot and dry weather in July, while various species were abundant into the fall of the year in New Jersey.

Heavy infestations of PRIVET MITE (Brevipalpus obovatus) occurred on privet and associated shrubs in Santa Clara County, California. In Oregon, a FALSE SPIDER MITE (Pentamerismus erythreus) severely damaged some arborvitae in the Grass Valley area of Sherman County. A new species of ERIOPHYID MITE (Eriophyes n. sp.) was observed damaging ornamental Exochorda sp. in the Portland area of the same State, but not extensively. Specimens of Eriophyes sp. collected on laurelcherry (Prunus caroliniana) in Alachua County, Florida, on August 25, may be a new species. Various species of MITES were numerous and common in home flower gardens in Nevada during the 1959 season.

Shade Tree Insects: Several lepidopterous species were reported as infesting and damaging various shade trees during the 1959 season. Infestations and damage were variable, depending upon the species involved and geographic location. Specimens of a NOCTUID (Ufeus sagittarius), collected under the bark of poplar in the Riverton area of Fremont County, Wyoming, constituted a new record for that State. Determination was made by H. W. Capps. Another new State record was the reporting of MIMOSA WEBWORM (Homadaula albizziae) from Webster Parish, Louisiana. This pest of honeylocust and mimosa was also reported from Duval County, Florida; Lake County, Indiana; and Madison County, Illinois, as new county records during 1959.

As in previous years, FALL WEBWORM (Hyphantria cunea) continued to be extremely abundant on wild cherry trees in most areas of the Clearwater River drainage in Idaho during September; and the pest reached epidemic proportions on shade trees throughout most of New Mexico, causing complete defoliation in many areas of Dona Ana, Eddy, Lea and Chaves Counties, as well as the Carlsbad Caverns National Park and Bandelier, Chaco Canyon and Aztec Ruins National Monuments. Infestations in Oklahoma were light to medium on a wide variety of trees throughout the State. Fall webworm was more widespread and considerably more abundant during 1959 in Illinois than for several years, while infestations on pecan and hickory in Georgia were lighter than in most years. Fall webworm was first encountered in Delaware as early as June 12 on linden in Kent County. Heaviest infestations in that State occurred on wild cherry, chokecherry, crabapple, black walnut and oak in southeast Sussex County from July through September. A moderate infestation in Maine during

July caused medium damage to roadside trees in the Gorham area of Cumberland County; but, during August, infestations and damage were generally light on shade trees throughout the State.

MIMOSA WEBWORM (Homadaula albizziae) was reported for the first time from Louisiana, heavily infesting mimosa in Webster Parish. The species was collected in Florida at Pensacola, Escambia County, on July 8, and for the first time in Duval County at Jacksonville on May 1. As yet, this pest has not been reported from the peninsular portion of the State. In Georgia, the pest was heavy throughout the State. Mimosa webworm was collected from honeylocust trees in Madison County, Illinois, for a new 1959 county record, and continued to spread throughout Indiana on the same host, being reported for the first time in Lake County, a point marking its farthest northward penetration in that State. Most honeylocust in southern Indiana were completely defoliated during August and September. Across the State line in Ohio, this species has become a pest of thornless honeylocust in the southwestern portion of that State. Mimosa webworm was of importance on mimosa and honeylocust trees over Virginia during 1959 and was heavy on these same hosts in most sections of Maryland. Infestations were particularly severe in Delaware during 1959, especially in Kent County and sections of New Castle County where no control measures were taken. Initial attacks occurred around mid-June in Delaware and the heaviest injury from more mature larvae was notable during the second week of July and again during the first week of September. In New Jersey, mimosa webworm caused heavy damage to honeylocust and Moraine locust in southern and central areas of the State, with infestations ranging northward through Middlesex County.

Two other WEBWORMS, Salebria afflictella and Tetralopha melanogrammos, were rather common during 1959 on sweetgum trees in Sussex and New Castle Counties, Delaware. However, they were not as injurious as in 1958 when they were reported as causing conspicuous injury to this host in Sussex County. In Wisconsin, populations of still another webworm, Tetralopha asperatella, were very low in the maple blight area of Florence and Forest Counties.

Migrations of EASTERN TENT CATERPILLAR (Malacosoma americanum) caused considerable consternation in the western portion of Pennsylvania, where attempts were made to get legislation in effect for control. Infestations in Delaware were more severe than during 1958. By mid-April, most eggs had hatched, and by the first week of May, tents were extensive and noticeable throughout the State on wild cherry, crabapple and chokecherry. The pest was again abundant on wild and neglected fruit trees in all sections of Maryland. Eastern tent caterpillar infestations were heavy on wild cherry in Georgia, defoliating many trees. This pest was common throughout Illinois, with 30 nests being observed in one wild cherry tree and 15-20 nests being common in some areas of the south central section. In the northern portion of the State, 1-6 nests were common.

TENT CATERPILLARS (Malacosoma spp.) built up considerably on forest trees and ornamentals in California during 1959, being severe in some locations when drought conditions occurred. Neglected fruit trees were severely damaged in a few northern locations. In Louisiana, tent caterpillars were not as numerous during 1959 as in 1958.

BAGWORM (Thyridopteryx ephemeraeformis) was very active during 1959 throughout Delaware on a wide variety of hosts. Heavy infestations occurred on isolated trees of sycamore, elm, willow, wild cherry, maple, arborvitae and white oak. Attacks were also noted on redcedar, mimosa and white pine.

SPRING CANKERWORM (Paleacrita vernata) was present on elms in Sussex County, Delaware, during May, but never reached the serious proportions attained during the 1958 season. Heavy infestations occurred in localized eastern and central areas of Nebraska during April, with moderate to severe defoliation of host trees. In South Dakota, infestations were reported on elms from Clay, Minnehaha

and Lawrence Counties during 1959. Unspecified CANKERWORMS defoliated elm, hackberry and locust throughout eastern Kansas in April. Many communities in that State were unable to carry out planned controls because of unfavorable weather.

The infestation of WALNUT CATERPILLAR (Datana integerrima) on native walnut trees in the Carlsbad Caverns National Park, New Mexico, declined noticeably during 1959; however, moderately heavy infestations were found near Hondo, Lincoln County. The pest was present throughout the northern three-fourths of Illinois during 1959 and completely defoliated black walnut trees in the northern half of the State. Infestations of YELLOW-NECKED CATERPILLAR (D. ministra) in Delaware, occurred in New Castle County during August; but, the heavy, widespread infestation, such as those that occurred in 1957 and 1958, did not appear during the 1959 season. Although present throughout the northern half of Illinois during 1959, the species was probably not as abundant as during the past 2 years. Yellow-necked caterpillar damaged shade trees and shelter belts in the southeast area of South Dakota.

Larvae of BASSWOOD LEAF ROLLER (Pantographa limata) were moderate on linden in Kingston, Delaware, during August; and LOCUST LEAF ROLLER (Nephoteryx subcaesiella), or one closely related, was common on honeylocust near Dixon, Lee County, Illinois, early in the same month. Populations of another LEAF ROLLER, Acleris chalybeana, were very low on maple in northeastern Wisconsin.

SATIN MOTH (Stilpnotia salicis) caused 98 percent defoliation of a few willow and poplar trees at one location in Bangor, Penobscot County, Maine, in July. Larvae of WHITE-MARKED TUSOCK MOTH (Hemerocampa leucostigma) were common to fairly abundant on elms and sycamores during June in Delaware, but infestations were generally lighter during 1959 than they were during 1958. Also in Delaware, CATALPA SPHINX (Ceratomia catalpae) caused complete defoliation of many catalpa trees in Kent and Sussex Counties during late September and early October. However, infestations in general did not encompass as wide a range as during 1958. In Illinois, catalpa sphinx defoliated many catalpas in the southern half of the State.

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) damaged elm and willow trees in San Mateo and Santa Clara Counties, California, and attracted the usual amount of attention in other northern locations in the State. Larvae of PAINTED-LADY (Vanessa cardui) defoliated elms in the Albuquerque area of Bernalillo County, New Mexico, during October. In Arizona, heavy infestations of a SHIELD BEARER (Coptodisca sp.) occurred on poplars in Yuma County during June and in the central area of the State during July. As many as 24 larvae could be found in a single leaf. Damage to foliage was heavy.

Various species of Coleoptera were reported as damaging to shade trees during the 1959 season, the degree and extent of damage varying with location, pest and host involved. SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) was reported for the first time in South Dakota, being found on a window sill in a home in Minnehaha County during the first week of May. It was found in 3 areas of the State during 1959 and caused considerable damage. However, no Dutch elm disease was reported from this State during the year. This pest also slowly extended its range and damage in California during 1959, with complete kill of many elms occurring over the State. This common vector of Dutch elm disease in Indiana was noted continuously from May 20 to September 23, indicating an overlapping of generations. It was also very abundant in the Champaign-Urbana area of Illinois. Smaller European elm bark beetle, the principal vector of Dutch elm disease in Wisconsin, began emerging May 12 in Milwaukee County. Infestations of this beetle were reported for the first time in Vernon, Monroe, Juneau, Dunn, Outagamie, Brown and Manitowoc Counties during 1959. Incidence of Dutch elm disease reached 3,580 cases during 1959, compared with 1,862 during 1958. The disease was found for the first time in Columbia, Dodge, Fond du lac, Lafayette

and Winnebago Counties during the 1959 season. Smaller European elm bark beetle also continued to spread Dutch elm disease in New Jersey, as did NATIVE ELM BARK BEETLE (Hylurgopinus rufipes).

Several species of leaf beetles infested elms and other shade trees in various states, causing moderate to severe damage. Most prominent among these was ELM LEAF BEETLE (Galerucella xanthomelaena), which was more prevalent in California than in previous years and required considerable control. In Los Angeles County, a TACHINID (Erynnia nitida), parasitic on this beetle, apparently exerted good control in the Castaic area. In Nevada, elm leaf beetle adults were active the first part of May and egg laying began in mid-May. Both first and second-brood larvae caused serious damage, with untreated trees being almost 100 percent damaged, as were those inadequately treated. In most areas, poor treatment increased total damage. To the east, in Utah, elm leaf beetle was much less destructive to elm foliage than during the 1958 season in Salt Lake and Weber Counties, but was more severe in Cache County than for several years. Adults began emerging in the Parma area of Canyon County in southwestern Idaho during the first week of June, and by the end of the month, moderate adult feeding damage to foliage was observed on most elm trees. Larval emergence began about the first week of July (some 2 weeks later than that recorded in previous years) and numerous elms were largely defoliated from larval attack by mid-July. General infestations developed in Jerome County, Idaho, during July and larval feeding damage was severe. By the end of the month conspicuous defoliation of elms had occurred in all areas of southern Idaho. In Oregon, elm leaf beetle was abundant and noticeably damaging to elms all over the State during 1959.

Elm leaf beetle severely damaged elms in the eastern half of Dodge City, Ford County, Kansas, being more severe on Chinese elm than on American elm. A survey in the southwestern area of the State indicates that this is definitely an isolated infestation. Infestations of this beetle became more widespread throughout Oklahoma during 1959. Heavy defoliation occurred throughout the east central and central areas of that State, with additional reports coming from several new localities in the south central and west central areas. Populations over Oklahoma were considerably heavier than were noted during 1958. In Arkansas elm leaf beetle continued to be a serious pest of Chinese elms and, in some instances, on American elms during 1959. The pest was very numerous in the southern half of Illinois and caused much browning and premature dropping of leaves, especially on Chinese elms. Eggs, larvae and adults were present in Greene County by May 27. This leaf beetle was also exceptionally heavy on Chinese elms in Indiana from Lafayette south, and many trees were completely brown as a result of larval feeding in August. In Delaware, adults and eggs were first found in Sussex County on May 15 and extensive injury from this pest occurred only in sections of this county during June and early July. Elm leaf beetle was heavier in Providence County, Rhode Island, by mid-July than it had been for several years.

Also in Rhode Island, IMPORTED WILLOW LEAF BEETLE (Plagioderia versicolora) was abundant on willow, with adults appearing by mid-July in South Kingstown, Washington County. Larvae and adults of this beetle were common throughout most of Delaware and caused moderate injury to willows in most areas during May and June. In New Castle County, LOCUST LEAF MINER (Chalepus dorsalis) adults were present and feeding on black locust the first week of May. Subsequent larval mining and adult feeding injury were only moderate during the 1959 season. In Illinois, locust leaf miner was extremely abundant on black locust near Havana, Mason County, July 8; practically all leaves had turned brown. The beetles migrated to nearby soybeans shortly afterwards and did considerable leaf feeding. Moderate to heavy infestations of ELM CALLIGRAPH (Calligrapha scalaris) damaged elms in central and south central Oklahoma and an infestation in South Dakota damaged American and Chinese elms in Davison County. Another LEAF BEETLE (Anomoea laticlavata) severely injured honeylocust early in the season in many

localized areas over a large part of Texas. In Oklahoma, TWIG GIRDLER (Oncideres cingulata) caused widespread damage to a variety of shade trees in east central north central and central areas of the State; and in Utah, LOCUST BORER (Megacyllene robiniae) damage again increased in Salt Lake County, with many desirable trees being killed or damaged. MAY BEETLES (Phyllophaga spp.) were stripping foliage from elm, persimmon and oak in northern Louisiana during May. WOOD BORING BEETLES caused some damage to maple, ash, poplar, willow and locust trees in Utah during 1959, and unspecified CURCULIONIDS were heavy on most nut-bearing trees in Arkansas.

Several species of APHIDS were damaging to some degree in various areas of the Nation during 1959. In California, an ELM APHID (Myzocallis pulchellus) was found on street elms in Auburn, Placer County, for a new State record. Another APHID, M. elegans, was found for the first time at the same locality infesting a limited number of the same host. This species was previously taken in Sacramento in 1932. NORWAY-MAPLE APHID (Periphyllus lyropictus) caused normal or below-normal damage to shade trees in Utah. In Idaho, overwintering eggs of this species completed hatching by April 17 and heavy infestations developed on maples in Franklin and Latah Counties during June. By July, additional infestations had developed in many southwestern parts of the State. PAINTED MAPLE APHID (Drepanaphis acerifoliae) occurred in Nevada in above-normal numbers on maples. Populations on maples in Delaware were abundant by mid-May and all stages and forms remained rather numerous throughout most of the season, particularly in New Castle County. Leaf-curl injury caused by WOOLLY ALDER APHID (Prociphilus tessellatus) to silver maples in Sussex County, Delaware, was rather severe during mid-June; and the species appeared in outbreak numbers on the same host in central sections of Maryland during 1959.

A LEAF-CURL ASH APHID (P. fraxinifolii) caused normal or below-normal damage to shade trees in Utah. Another LEAF-CURL APHID (P. fraxini-dipetalae) was particularly heavy on ash trees in Marin and Sacramento Counties, California, but populations were light in other areas of the State; street trees were mainly affected. WOOLLY APPLE APHID (Eriosoma lanigerum) colonies on elms during May and June in southern Sussex County, Delaware, were very heavy, causing extensive leaf curl; and WOOLLY ELM APHID (E. americanum) was normally damaging in Utah, often being heavily parasitized. TULIPTREE APHID (Macrosiphum liriodendri) populations were building up in Delaware by May 15 and became very abundant this season in New Castle County during June. In Florida, a HICKORY APHID (Longistigma caryae) infested oaks at various points in the State during February. Aphids generally were unusually abundant on many varieties of shade trees in Utah, with those species on beech and linden being very abundant, especially in the fall. Willows and narrow leaf poplars were sometimes severely infested and galls caused by Pemphigus spp. were conspicuous in parts of the Uintah Basin. Leaves folded by Thecabius populi-conduplicifolius and T. populi-monilus were common in several northern Utah counties. T. populi-conduplicifolius was moderately heavy on poplars in Colfax and Taos Counties, New Mexico; and a PHYLLLOXERA, probably Phylloxera popularia, was especially heavy on young poplar trees in Dona Ana, Otero and Chaves Counties, with twigs and branches covered with "cotton" from these insects.

COCCIDS were also of some concern on shade trees during the 1959 season. One of the principal species was EUROPEAN ELM SCALE (Gossyparia spuria). The pest was a problem in many areas of California on street elms, with honeydew being annoying to residents. Control measures were effective, when applied in time. This scale insect was generally common throughout the southern portion of Idaho, with extremely heavy infestations noted on elms in the Twin Falls area of Twin Falls County during early June; and many trees and shrubs were also damaged in Wyoming during 1959. European elm scale caused local normal damage in Utah during the 1959 season and built up on elms in New Mexico during the summer in Bernalillo, Santa Fe and Rio Arriba Counties.

European elm scale continued to be the number one pest of elms in the western portion of Kansas; however, in some locations, much of the injury may have been due to large populations of ELM SCURFY SCALE (Chionaspis americana). European elm scale caused damage to elm trees in Minnehaha and Lawrence Counties, South Dakota, during 1959, and commonly affected elms in Wisconsin, although incidence in this State appears to have decreased. Crawlers were very common in Delaware during August in sections of New Castle County on elms, heavy infestations causing death of some trees.

An outbreak of COTTONY MAPLE SCALE (Pulvinaria innumerabilis) occurred in the northern portion of Ohio and was found in unusual numbers on silver maples throughout Indiana. The insect was very heavy and widespread on soft maple in Illinois. In 1959 it commonly affected maples in Wisconsin where it appeared to increase in incidence. The species remained a problem and continued serious over most of Minnesota, especially in Edina, Hopkins and St. Louis Park in the Twin City area. It also damaged many trees and shrubs throughout Wyoming.

In Delaware, TULIPTREE SCALE (Toumeyella liriodendri) was rather abundant during the 1959 season on some tuliptrees in New Castle County; and PUTNAM SCALE (Aspidiotus ancylus) caused concern on elms in Maryland. GOLDEN OAK SCALE (Asterolecanium variolosum) was generally heavy in California on oak in San Joaquin, Santa Cruz and Lake Counties, while another scale insect, Stomacoccus platani, occurred generally in the State, with heavy infestations in San Mateo, Sacramento and Santa Barbara Counties. Several species of Lecanium were unusually heavy in Indiana on hickory, oak and other shade and ornamental trees.

Several other pest species were of concern on shade trees during 1959. A MIRID (Labopidea ainsliei), reported for the first time from North Carolina, was abundant on Moraine locust in Wake County, causing defoliation during early June. SYCAMORE LACE BUG (Corythucha ciliata) caused severe bleaching and considerable defoliation of sycamores in Kansas; while in Rhode Island, the pest became extremely heavy in West Warwick, Kent County. Populations were very high during 1959 on sycamores and London planetrees in Delaware. Large numbers were present and caused leaf injury as early as mid-May and populations remained high most of the season, causing rather extensive yellowing and leaf curling. PERIODICAL CICADA (Magicicada septendecim) was present throughout the southern two-thirds of Illinois and caused considerable flagging of trees in some localities. Unspecified species of LEAFHOPPERS were quite numerous on rebud in Illinois. Moderate to heavy populations were noted on many of the common shade trees in Kansas, but no attempt was made to collect and identify specimens. Leafhoppers also caused moderate injury and discoloration to elm foliage in Utah, with pussy willow discolored at Nephi, Juab County, and at Provo, Utah County. Various leafhoppers were unusually abundant on many broad-leaf trees in Nevada, especially poplar and willow; and leaves of sycamore were turned brown and dropped prematurely in southwestern Washoe County due to Caladonus coquilletti.

A LEAF MINER (Obolodiplosis robiniae) was very abundant in Delaware, causing considerable rolling of leaf margins of black locust in western Kent County during mid-May. Light to moderate infestations of a GALL MIDGE (Itonida ocellaris) caused light damage to maples in Franklin, Hancock County, Maine, during August. Moderate infestations of another GALL MIDGE (Dasyneura gleditschiae) caused moderate damage to honeylocust trees in most areas of Nebraska. Throughout Texas, several species of GALL INSECTS were numerous on various species of trees during the 1959 season.

The appearance of a SPIDER MITE (Oligonychus aceris) on a nursery property in Riverside County, California, early in the fall of 1959, was the first record of this species in the State. Detection efforts revealed infestations in several locations on silver maples in Riverside, Los Angeles, San Bernardino, Orange and El Dorado Counties. In Utah, another SPIDER MITE, Eotetranychus weldoni,

was responsible for substantial discoloration of weeping willow, black willow and other willow foliage; and still another species, Oligonychus coniferarum, caused much discoloration and some defoliation of junipers throughout Kansas during June, July and August. In Rhode Island, many inquiries were received during May and June concerning MAPLE BLADDER-GALL MITE (Vasates quadripedes).

In Delaware, WILLOW SAWFLY (Nematus ventralis) larvae were extremely abundant in some areas of Sussex County, causing complete defoliation of willows in one particular area during mid-June. Infestations were also noted in western Kent County during mid-May. ELM LEAF MINER (Fenusa ulmi) was active and common throughout Minnesota during 1959.





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*Cooperative*

**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SORGHUM MIDGE reported for first time in California; infestation widespread in Tulare County and southern Fresno County. Heaviest EUROPEAN CORN BORER infestation ever recorded present in Cass and Richland Counties, North Dakota. FALL ARMYWORM heavy and causing considerable damage to young small grains and turf grasses over northern Texas and counts 2-100 per square foot in infested fields in Oklahoma, with spots being destroyed in some fields in the latter State. Incidence of corn lodging in Wisconsin, due to NORTHERN CORN ROOTWORM, greater than for past few years. (p. 991). Economic numbers of SPOTTED ALFALFA APHID present in Asotin and Walla Walla Counties, Washington; gradually increasing in Idaho; and increasing in central Arizona and in many areas of Oklahoma. (pp. 992-993). ALFALFA CATERPILLAR damage to alfalfa foliage very noticeable in Chaves and Eddy Counties, New Mexico. (p. 993).

Citrus INSECT situation in Florida; general forecast (October through December). (p. 994).

CABBAGE LOOPER remains high on crucifers in areas of Arizona and Texas. (p. 994).

Current SCREW-WORM situation report. (p. 998).

HAWAIIAN insect notes. (p. 1002).

INSECT DETECTION: New state records reported were sorghum midge in California, southwestern corn borer in Tennessee (p. 991) and Bapta vestaliata, Morrisonia mucens and Caenia dimidiata in South Carolina (p. 1000). A new county record reported was alfalfa weevil in Hamilton County, Kansas. (p. 993). New records for the island of Kauai, Hawaii, were Anthrax distigma, Circulifer tenellus, Deltocephalus sonorus, Exitianus exitiosus, Scaphytopius loricatus, Stragania robusta, Tropidosternus lateralis binotatus and Bembidion niloticum. (p. 1002). Three rare species that were recorded in Florida are Messataporus compressicornis, Polistiphaga stupida (p. 999) and Listronotus blatchleyi (p. 1000).

Summary of FOREST INSECT CONDITIONS IN THE UNITED STATES, 1959. (p. 1003).

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Reports in this issue are for week ending October 14, unless otherwise indicated.

## WEATHER BUREAU 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER

1960

The Weather Bureau's 30-day outlook for the period mid-October to mid-November calls for temperatures to average above seasonal normals in the southeast quarter of the Nation and also along the West Coast. Below normal temperatures are predicted for the central and southern portions of the Western Plateau and Great Plains. In unspecified areas near normal temperatures are indicated. Precipitation is expected to exceed normal over the western two thirds of the Nation except for subnormal amounts along the West Coast and in the Northern Plains. Over the eastern third of the country about normal rainfall is indicated except for subnormal amounts east of the Appalachians.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

### WEATHER OF THE WEEK ENDING OCTOBER 17

The week was abnormally cold in the Far West and abnormally warm east of the Great Plains. Precipitation was widespread, occurring on 2 days in most sections, with heavy amounts extending from the lower Great Plains to the Great Lakes.

Temperatures in the Far West were about normal or slightly above at the beginning of the period, and well below the remainder. Weekly averages generally ranged from 3° to as much as 10° below normal. Freezing extended southward over much of northern and western Utah on the 15th, for the first time this season. Unseasonably mild, sunny weather, favorable for harvesting, prevailed east of the Great Plains until the passage of a cold front late in the period. Early in the week, highs in the 80's extended northward to Minnesota and Michigan. A high of 82° at Escanaba, Michigan, on the 10th was a new record there for so late in the season. Weekly averages were 6° to as much as 9° above normal in most of the northeastern quarter of the Nation, and 3° or more in the South.

Light to moderate precipitation fell in the Pacific Northwest and Great Basin early in the week and in the central and lower Rocky Mountain area during the latter part, with amounts ranging from 1 to over 4 inches on the higher mountains of Colorado and New Mexico. Snow and rain mixed fell over much of Nevada during one of the best October storms in many years in that State. Snow also fell at many higher elevations in the southern Rockies. The first heavy snowfall of the season in the mountains of northern New Mexico, ranging up to 16 inches, closed some passes and slowed traffic. At Walsenburg, Colorado, (over 6,000 feet elevation) an 18-inch snowfall damaged trees and lines. Heavy rains the latter part of the week from the lower Great Plains to the Great Lakes ranged up to more than 12 inches in southern Texas, over 2 inches in eastern Kansas, northern Arkansas, and parts of Missouri, and over an inch in northern Illinois. Much of Missouri received soaking rains for the first time in 8 to 10 weeks. In Texas, some farmland was flooded in the Coastal Bend region, and severe thunderstorms and several tornadoes occurred across the State. Precipitation east of the Mississippi was light, except in parts of the Great Lakes region and a few other relatively small, scattered areas. Traces of snow were reported in northern Maine. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Reported for the first time in the State. Varying infestations, very light to heavy, on milo maize in Visalia area of Tulare County, causing severe damage to field margins. Collected by W. E. Pendery; determined by M. Wasbauer. Subsequent survey detected species widespread in milo in Tulare County and southern Fresno County. Several varieties of milo infested. (Cal. Coop. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - TENNESSEE - Collected for first time in State in Shelby County in corn. Specimen submitted for identification on September 13; larval determination made by H. W. Capps. Since this initial identification, the species has also been found in Tipton County. (Mullett). NEW MEXICO - Majority of cornfields in eastern counties heavily infested; occasional infestation found in roots of broomcorn and grain sorghum. (N. M. Coop. Rpt.).

SORGHUM WEBWORM (Celama sorghiella) - ALABAMA - Plentiful in grain sorghum in Lee County. (Guyton).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Moderate to heavy (2-7 per stalk) in late grain sorghum in Brazos and Burleson Counties. (Randolph).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - ALABAMA - Fairly common in roots of corn in Lee County. (Guyton).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NORTH DAKOTA - Fall abundance survey completed in Cass and Richland Counties; 98 percent of plants infested, with an average of 474 borers per 100 plants. This is heaviest infestation ever recorded in State. Stalk breakage common in many fields. (N. D. Ins. Sur.). NEBRASKA - Minor infestations found in castor beans in Adams County. (Roselle). NEW MEXICO - Survey for this species in eastern counties during period October 3-15 negative. (N. M. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - KANSAS - Infestations in grain sorghum in southwest area not serious; larval counts ranged 0-0.5 (average 0.3) per head. Very little cracked grain or larval castings noted on either plants or ground. (DePew).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Heavy infestations causing considerable damage to young small grains and turf grasses over entire northern half of State. (Texas Coop. Rpt.). OKLAHOMA - A new generation of larvae appearing in a variety of crops (particularly small grains) in spotted areas throughout most of State. Heaviest concentrations apparently in southern half of State, where counts ranged 2-100 per square foot in infested fields. Heavy populations destroyed some spots as large as half an acre in some fields. Counties reporting damage included Garfield, Kay, Pawnee, Craig, Pittsburg, Atoka, Bryan, Johnston, Love, Jefferson, Tillman, Jackson, Kiowa, Washita, Pontotoc, Grady, Lincoln and Kingfisher. (Okla. Coop. Sur.). ALABAMA - Found in grain sorghum in Lee County (Guyton) and active in other areas of State, particularly in oats in Tennessee Valley area and on barley in Lauderdale County (Grimes).

ARMYWORM (Pseudaletia unipuncta) - SOUTH CAROLINA - Newly emerged rye being damaged in Richland County. (Nettles et al., Oct. 5). DELAWARE - Larvae present in field in Kent County. (Burbutis, Mason).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Incidence of corn lodging in 1960, due to this species, greater than for past few years; but excellent results from controls obtained. Normally, corn planted successively 3 or more years on same ground suffers heaviest rootworm attacks. However, apparently in areas where total population great, adult migrants to first-year corn silks responsible for fairly heavy rootworm infestations in second successive year corn is planted in same field. It also appears that the frequency with which corn is

being planted successively in the same field is on the increase. This may have a substantial bearing on rootworm populations which have been considered high in recent years. (Wis. Coop. Sur., Oct. 7).

WIREWORMS - OKLAHOMA - Unidentified species damaging some fields of small grain in localized areas of Kingfisher and Woodward Counties. (Okla. Coop. Sur.).

WHEAT CURL MITE (Aceria tulipae) - KANSAS - Light infestations in early volunteer wheat in Dickinson and Lincoln Counties in central area and Ottawa, Osborne and Mitchell Counties in north central area. Heavy infestations in volunteer wheat in Rooks County. Trace infestation in planted wheat in Ottawa, Russell, Rooks and Osborne Counties noted. (Somsen).

CORN LEAF APHID (Rhopalosiphum maidis) - ALABAMA - Plentiful in grain sorghum in Lee County. (Guyton).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Beginning to appear in volunteer wheat in some Jefferson County localities; counts 0-4 per square foot. (Okla. Coop. Sur.).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Infestations continue to increase in central area sorghum. (Ariz. Coop. Sur.).

SPITTLEBUGS - SOUTH CAROLINA - Severely damaging 15-acre field of Bermuda grass in Orangeburg County. (Nettles et al., Oct. 5).

FALSE CHINCH BUG (Nysius ericae) - KANSAS - Abundant on fireweed in edge of barley fields and in sorghum heads in Gove County, west central area. No damage apparent. (Gates).

A LEAFHOPPER - OKLAHOMA - Unidentified species damaging some lawns in localized areas of Sequoyah County. (Okla. Coop. Sur.).

A FIERY SKIPPER (Hylephila phylaeus) - CALIFORNIA - Medium infestation in Bermuda grass lawns in Banning, Riverside County. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - INDIANA - Digging in soybean field in Newton County showed 45 percent third instar, 33 percent second instar, 22 percent first instar; 1 egg found. (Gould).

WHITE GRUBS - KANSAS - Counts of Phyllophaga sp., not lanceolata, averaged 16 per square foot in wheat field in Marshall County on October 5. Several fields in same area being replanted because grubs killed out first planting. (Burkhardt). Grubs damaging wheat in Harper County; replanting probably necessary. (Gates).

OKLAHOMA - Unidentified species damaging some fields of small grain in localized areas of Kingfisher County. (Okla. Coop. Sur.).

GRASSHOPPERS - OKLAHOMA - Several species continue to cause marginal damage to some fields of small grain and alfalfa in various areas. Counties reporting spotted damage include Cimarron, Texas, Alfalfa, Adair, Hughes, Comanche, Cotton and Stephens. Counts made in fields checked in Cimarron County averaged 5-7 per square yard. (Okla. Coop. Sur.). MARYLAND - Melanoplus spp. causing moderate to heavy foliage injury in several fields of soybeans in southern area. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - WASHINGTON - Economic numbers in alfalfa in Asotin and Walla Walla Counties. (Cook, Harwood, Telford; Oct. 7). IDAHO - Populations gradually increasing; ranging up to 60 per sweep in 6-inch high alfalfa in Canyon County. (Waters). Light populations in alfalfa near Lewiston, Nez Perce County; numbers range from few to many on roadside alfalfa plants. (Kambitsch). ARIZONA - Infestations continue to increase in central area alfalfa, with medium populations in many fields planted to susceptible varieties.



(Ariz. Coop. Sur.). NEW MEXICO - Light infestations in majority of alfalfa checked in Lea, Eddy and Chaves Counties. Populations appear to be building up considerably in De Baca County alfalfa. (N. M. Coop. Rpt.). OKLAHOMA - Populations continue to increase in alfalfa in many areas of State, mainly western two-thirds. Damaging infestations reported from Jackson, Tillman, Murray, Love, Bryan, Pittsburg, Grady, Payne, Pawnee, Kay and Alfalfa Counties. (Okla. Coop. Sur.). ALABAMA - More numerous than usual for time of year in Lee County. (Guyton).

PEA APHID (Macrosiphum pisi) - WASHINGTON - Very abundant on alfalfa in some fields near Asotin; further south along Snake River less abundant with considerable evidence of predation, fungus diseases and parasites. (Telford, Harwood; Oct. 7). NEW MEXICO - Generally light in alfalfa in southeast; an occasional moderately heavy infestation found in Eddy, Lea and Chaves Counties. (N. M. Coop. Rpt.). DELAWARE - Counts very variable in alfalfa throughout State, with highest 20 per sweep in New Castle and Sussex Counties. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Continued to infest alfalfa in south central and southwest areas; counts 2-4 per sweep. (Okla. Coop. Sur.). NEW MEXICO - Averaged 1-3 adults per sweep in Eddy County alfalfa. (N. M. Coop. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults increased on alfalfa statewide, with counts as high as 2 per sweep and nymphs fairly common. Adults and nymphs generally average 4 per 10 sweeps in soybeans in Kent and Sussex Counties. (Burbutis, Mason).

RAPID PLANT BUG (Adelphocoris rapidus) - DELAWARE - Adults generally present in alfalfa throughout State, averaging 1 per sweep in New Castle County where it is most numerous. (Burbutis, Mason).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults present on soybeans in Kent County and common on soybeans in Sussex County, with average of 1 per sweep. (Burbutis, Mason).

ALFALFA WEEVIL (Hypera postica) - KANSAS - Collected in the State during week of July 11-15 on alfalfa in Cheyenne County, northwest area, and Hamilton County, southwest area. Determinations by W. H. Anderson and D. M. Weisman. New record for Hamilton County. (Peters).

CLOVER ROOT BORER (Hylastinus obscurus) - WASHINGTON - Untreated field of Kenland red clover very severely damaged near Chehalis. (Brannon).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NEW MEXICO - Moderate to heavy larval infestations in alfalfa in Chaves and Eddy Counties. Average 2-3 per sweep in fields checked in Eddy County and 2-4 per sweep in Chaves County. Damage to foliage very noticeable. (N. M. Coop. Rpt.).

GREEN CLOVERWORM (Plathypena scarba) - DELAWARE - Larvae present in soybeans and alfalfa in New Castle and Kent Counties and in soybeans in Sussex County. (Burbutis, Mason).

A SOD WEBWORM (Crambus sp.) - KANSAS - Counts of 15 pupae per square yard recorded in bluegrass in Johnson County on September 28. A few larvae also present. Adults very numerous. (Thompson).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Loxostege sp. infesting alfalfa in south central area; counts ranged 1.5-2 per sweep in some fields. Also damaging alfalfa in some fields in Garfield County. (Okla. Coop. Sur.). NEW MEXICO - Spotty to heavy infestations, probably L. sticticalis, causing considerable damage to alfalfa in Chaves County, especially in young stands. Number of fields required treatments. (N. M. Coop. Rpt.).

FRUIT INSECTS

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Damaging pecans in Creek, Hughes, Murray and Choctaw Counties. (Okla. Coop. Sur.).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - CALIFORNIA - Heavy in walnut trees in French Camp, San Joaquin County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Detection program for 1960 completed. Sixty Frick traps used in western area from Medford north to Portland. Results negative. (Larson).

Citrus Insect Situation in Florida - End of September - PURPLE SCALE (Lepidosaphes beckii) (58 percent of groves checked infested) activity is increasing. Populations very low and will not increase greatly in any district. FLORIDA RED SCALE (Chrysomphalus aonidum) (73 percent of groves checked infested) activity decreased and further decline expected until the trend reverses about mid-October. Populations still above average for time of year, but will be at average level during most of October. High activity present in upper east coast, Indian River, Ridge and Brooksville districts. CITRUS RED MITE (Panonychus citri) (27 percent of groves infested) - The recent decrease in activity has brought population to lowest level in 9 years of record. All districts low and will continue low through October. CITRUS RUST MITE (Phyllocoptruta oleivora) (67 percent of groves infested) activity has taken an upward trend which is expected to continue through October. Populations generally below average as of October 5 and will remain low until late October; however, some heavy infestations now exist and more will appear. Highest activity in Indian River, west coast, Brooksville, Ridge and Bartow districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred); October 5). General Forecast - October through December 1960 - PURPLE SCALE populations will hold at low levels of past year. Temporary increase may follow sulfur or lime-sulfur applications. Infestations of FLORIDA RED SCALE will increase in late October and are expected to be above average until mid-December. CITRUS RED MITE populations, generally, will be below average until mid-November, then increase. Dry weather and/or sulfur will promote buildup. TEXAS CITRUS MITE (Eutetranychus banksi) infestations will remain low in October but increase to above average in November and early December. Infestations of CITRUS RUST MITE will be spotty, but generally will increase rapidly in October and be above average in November and early December. (Simanton, October 11).

CITRUS WHITEFLY (Dialeurodes citri) - LOUISIANA - Infestation heavy on satsuma at Diamond, Plaquemines Parish. (Spink).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues high on cabbage in central and southwest areas; as high as 10-12 per plant in some fields. Egg counts on lettuce down, but still average 7 per plant in some Yuma County fields. (Ariz. Coop. Sur.). TEXAS - Up to 4 larvae per leaf causing heavy, widespread damage to cabbage, cauliflower and broccoli in Zavala County. (Harding). DELAWARE - Larval injury light in cauliflower in Kent County. (Burbutis, Mason).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - CALIFORNIA - Heavy on approximately 30 acres of strawberries in Downey area, Los Angeles County. (Cal. Coop. Rpt.).

A RHODINID (Apodemia mormo virgulti) - CALIFORNIA - Heavy adult populations feeding on mustard flowers in Romoland, Riverside County. (Cal. Coop. Rpt.).

FLEA BEETLES (Phyllotreta spp.) - TEXAS - P. striolata larvae caused severe damage and complete loss of 10 acres of turnips in Harris County. (Boultinghouse). Heavy, local infestations of P. pusilla, averaging 5 per leaf, attacking turnip, mustard, radish and rutabaga in Zavala County. (Harding).

APHIDS - NEW MEXICO - Brevicoryne brassicae generally heavy on cabbage in Lea County. (N. M. Coop. Rpt.). TEXAS - Aphis gossypii infestations over 100 per leaf on cantaloups, locally, in Zavala County; killing many plants. (Tex. Coop. Rpt.). OKLAHOMA - Several species light to medium on a variety of fall vegetable crops in several southern areas. (Okla. Coop. Sur.). DELAWARE - Myzus persicae colonies on lower leaves of cauliflower in Kent County. (Burbutis, Mason).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults common (1 per sweep) on carrots in New Castle County; nymphs present. (Burbutis, Mason).

HARLEQUIN BUG (Murgantia histrionica) - NEW MEXICO - Continues damaging in Lea County cabbage. (N. M. Coop. Rpt.).

LEAFHOPPERS - UTAH - Empoasca filamenta has been extremely abundant; discolored potato foliage at Plain City, Weber County. (Knowlton). TEXAS - Several unspecified species suspected of transmitting eggplant yellows in Zavala County; 20-30 percent of untreated eggplants exhibiting yellows symptoms. (Harding).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Heavy populations developing on squash in San Diego, San Diego County. (Cal. Coop. Rpt.).

#### COTTON INSECTS

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Infestations heavy in cotton in some central and southwestern areas; migrating larvae a problem. (Ariz. Coop. Sur.).

FALL ARMYWORM (Laphygma frugiperda) - NORTH CAROLINA - Defoliating cotton in Bladen County. (Bowers, Wray).

COTTON LEAFWORM (Alabama argillacea) - ALABAMA - Scarce in Lee County; larvae ranged from very small to last instar, with few pupae also present. (Guyton).

PINK BOLLWORM (Pectinophora gossypiella) - NEVADA - Green boll survey in Moapa Valley, Clark County, negative; light trap surveys negative in Pahrump Valley, Nye County. (Bechtel, Zoller).

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Plentiful in Lee County. (Guyton).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - NORTH CAROLINA - Dendroctonus frontalis caused serious damage on 10 acres of loblolly and pond pine in Tyrrell County; trees being cut and treated on 3 locations. (Carson; N. C. For. Pest News Lett.). D. terebrans caused scattered damage to loblolly and longleaf pines in Brunswick County; outbreak serious on 20 acres or more of pond pine in Dare County, with owner carrying out control; normal for this time of year in Hoffman Forest. (Sheiron, Carlson, Huff; N. C. For. Pest News Lett.). WYOMING - Dryocoetes confusus attacking and killing small groups of subalpine fir in Yellowstone National Park. (Denton, Sept. 30).

IPS BEETLES (Ips spp.) - NORTH CAROLINA - Small outbreak on longleaf pine on 1/16 acre of recently burned area in Columbus County (Morris); killing scattered trees following logging in 28-acre tract (Crider). Killing Virginia pine on  $\frac{1}{2}$  acre in Richmond County, apparently started by lightning strike (Boyette) and

several small outbreaks on Virginia and loblolly pines in Anson and Richmond Counties, with trees being salvaged (Ward). (N. C. For. Pest News Lett.).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - Severely damaging white fir by killing groups of 5-25 poles and sawtimber in Fort Bidwell Indian Reservation. Damage to a lesser extent occurs all the way south on east side of Warner Mountains, Modoc County. (W. Hamilton).

PALES WEEVIL (Hylobius pales) - NORTH CAROLINA - Girdling scattered pine seedlings on 100-acre tract of cutover land in Carteret County. (Stone, Williams; N. C. For. Pest News Lett.).

NANTUCKET PINE MOTH (Rhyacionia frustrana) - KANSAS - Larvae working inside twig terminals of Scotch pine in Sedgwick County and in southeastern counties, in pine shelter belt and reforestation plantings. (Thompson). OKLAHOMA - Counts of 8 per 6-15-foot and 18 per 4-10-foot pines causing appreciable damage in 2 plantings checked in McCurtain County. (Okla. Coop. Sur.). NORTH CAROLINA - There has been little evidence of the epidemic of this pest since the passage of Hurricane Donna. (Huff; N. C. For. Pest News Lett.).

PINE TUBE MOTH (Argyrotaenia pinatubana) - WISCONSIN - Infestations scattered, but some locally heavy. Larvae about one-half inch long in Iowa and Grant Counties. (Wis. Coop. Sur., Oct. 7).

PINE WEBWORM (Tetralopa robustella) - WISCONSIN - Larvae maturing in Columbia County jack and red pine; pupation probably begun. (Wis. Coop. Sur., Oct. 7).

PINE SAWFLIES (Neodiprion spp.) - WISCONSIN - N. swaini completed cocooning in Dane County; cocooning also probable in other southern counties. (Wis. Coop. Sur., Oct. 7). NORTH CAROLINA - Neodiprion spp. defoliating few loblolly pines in Orange County. (Harris; N. C. For. Pest News Lett.).

A PENTATOMID (Chlorochroa uhleri) - WISCONSIN - Adults feeding on main stems of Iowa County white and red pine 5-6-feet high. (Wis. Coop. Sur., Oct. 7).

A COCCID (Matsucoccus paucicicatricis) - CALIFORNIA - Seriously damaging and causing some kill in 400 acres of sugar pine in Springville-Tulare River district of Sequoia National Forest. (D. Hosler).

A FALSE SPIDER MITE (Brevipalpus pini) - CALIFORNIA - Heavy on Pinus sp. in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Medium to heavy on pecan and other trees in Bastrop County. (Reese). NEW MEXICO - Continues to defoliate trees in most areas; also crawling on walls and entering homes in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Heavy on variety of ornamental trees in south central and southeastern areas. Infestations reported from Carter, Love, Johnston, Bryan, Coal, Pittsburg, Choctaw and McCurtain Counties. (Okla. Coop. Sur.). ALABAMA - Adults present in many areas of State. (Grimes). Damaged ornamental plant in Mobile County. (Bolton). NORTH CAROLINA - Feeding on oak in Cleveland County. (Clapp, Farrier).

A NYMPHALID - TEXAS - Heavy, local larval infestations, probably Polygona interrogationis, on Chinese elm in Amarillo, resulting in complete defoliation of some limbs. (Texas Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - TEXAS - Attacking oaks in Robertson County; some controls being applied. (Newton). Heavy and widespread on pecans in Kendall and Gillespie Counties. (Texas Coop. Rpt.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continues damaging to shade trees in central, east central and northeastern areas of State. (Okla. Coop. Sur.). KANSAS - Infestations on elms vary 5-25 percent locally in eastern half of State. Eggs hatched in rearing cages and larvae are 1/16 to 1/8 inch in length. (Thompson). INDIANA - Damaging English walnut at Columbus, Bartholomew County, and persimmon in Fountain County. (Schuder).

WALKINGSTICK (Diapheromera femorata) - WISCONSIN - Total of 80,000 acres of Marinette County scrub oak moderately to completely defoliated. Some of defoliated acreage coincides with this insect's 1959 defoliation. (Wis. Coop. Sur., Oct. 7).

A POPLAR GALL BUD MITE (Aceria parapopuli) - UTAH - Severely damaged numerous poplar trees in Delta area of Millard County. Also damaging in portions of Rich, Daggett, Uintah and Duchesne Counties. Det. by H. H. Keifer. (Knowlton).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Medium on yard walnut trees in Marysville, Yuba County. (Cal. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeriformis) - TEXAS - Heavy, local infestations defoliating roses in Bexar County. (Texas Coop. Rpt.). KANSAS - Few egg-filled bags observed in Barber County, October 3-7. (Calkins).

A CHRYSOMELID (Blepharida rhois) - OKLAHOMA - Causing heavy defoliation of ornamental sumac in Stillwater, Payne County. (Okla. Coop. Sur.).

APHIDS - CALIFORNIA - Heavy populations of adults and nymphs of Periphyllus populicola occurring on poplar in Milpitas, Santa Clara County. Macrosiphum euphorbiae heavy on chrysanthemums in Mountain View and Rhopalosiphoninus latysiphon heavy on Saxifraga sp. in Los Altos, both also in Santa Clara County. (Cal. Coop. Rpt.). NEVADA - Rhopalosiphum berberidis moderate on ornamental barberry in Reno, Washoe County. (Bechtel). WYOMING - Macrosiphum rudbeckiae infesting Rudbeckia sp. in Wheatland Canyon, Platte County. (Fullerton). OKLAHOMA - Several species continue common on variety of shrubs throughout most of State; increasing on arborvitae in several areas. (Okla. Coop. Sur.).

SPITTLEBUGS - CALIFORNIA - Heavy populations of undetermined species on acacia in Arcadia area, Los Angeles County, and on peppertrees in Riverside, Riverside County. (R. S. LaRue).

COCCIDS - FLORIDA - Geococcus coffeae collected on philodendron (Philodendron selloum) at Lockhart, Orange County, September 27, by R. J. Griffith. This is a new locality record. (Fla. Coop. Sur.). WYOMING - Chionaspis sp. very abundant on willows in mountain areas of Platte and Albany Counties. (Fullerton).

SOUTHERN RED MITE (Oligonychus ilicis) - CALIFORNIA - Heavy on pyracantha in San Diego, San Diego County. (Cal. Coop. Rpt.).

#### INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (Siphona irritans) - OKLAHOMA - Heavy on 80 head of beef cattle in Marshall County (500 per animal on calves, 1,500 per animal on cows, 3,000 per animal on bulls) and 400 head of mixed cattle surveyed in Love County (500 per animal on cows and 900 per animal on bulls). Also causing concern in Comanche, Cotton, Stephens, Murray, Bryan, Atoka, Choctaw, McCurtain, Okfuskee, Muskogee, Washington and Pawnee Counties. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Several species continued to cause some concern in Atoka and Choctaw Counties, although populations continued to decline in those areas. (Okla. Coop. Sur.).

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - Infestations reported by parish as follows: De Soto - 1; Red River - 4; Franklin - 4; Richland - 2. (Spink). OKLAHOMA - Continued to cause concern in Cotton, Stephens, Bryan, Choctaw, Creek and Okfuskee Counties. (Okla. Coop. Sur.).

Current Screw-Worm Situation Report - Week Ending October 16, 1960

State	Cumulative Totals - 1960		Counties or Parishes	
	Cases	Premises		
Alabama	1	1	Geneva	
Arkansas	30	25	Chicot Ashley Crawford	
Louisiana	77	56	Richland Red River Franklin Rapides	De Soto Ouachita Madison
Mississippi	47	25	Issaquena Sharkey Sunflower Washington Leflore	
Totals	155	107	16	

Screw-worm Cases Intercepted at Inspection Stations: 1960 - 22 to date.

FACE FLY (Musca autumnalis) - INDIANA - Activity continues throughout northern half of State. Additional infestations in homes reported from Marshall and Madison Counties. Oviposition in cow manure observed at Lafayette, Tippecanoe County, October 13. Adults active on faces of cattle, ranging to highs of 30 per infested animal. (Matthew).

HOUSE FLIES - NORTH DAKOTA - Numerous reports of high populations reported from many sections. (N. D. Ins. Sur.). WYOMING - Musca domestica beginning to move into homes and becoming a nuisance throughout State. (Fullerton). ALABAMA - Heavy infestations of M. domestica around a supply warehouse in Mobile; infestations probably originating from an area behind warehouse where chickens maintained for short periods of time. (Seibels, Wallace).

MOSQUITOES - UTAH - Causing some annoyance to fishermen and campers in Logan Canyon, Cache County. (Knowlton). TEXAS - The reduction in numbers of Aedes taeniorhynchus is greater than for A. sollicitans. A. taeniorhynchus is well distributed throughout Jefferson County. Psorophora confinnis and P. ciliata remained essentially the same as for the previous month, except for a considerable increase of P. ciliata in north Beaumont. Anopheles crucians increased in mid-Jefferson County area and A. quadrimaculatus increased significantly in south Beaumont. A single specimen of Mansonia perturbans appeared in the light trap in mid-Jefferson County. Landing rates of mosquitoes were high at the beginning of the month, but became quite low at the close of the month. (Jefferson Co. Mosq. Cont. Dist.). NEBRASKA - Aedes vexans active in northern and eastern portions of State. (Rapp).

SIMULIIDS - UTAH - Causing some annoyance to fishermen and campers in Logan Canyon, Cache County. (Knowlton).

YELLOW JACKETS - UTAH - Annoying campers about some northern canyon picnic and camping areas. (Knowlton).

A CONENOSE (Triatoma contracta) - CALIFORNIA - Nymphs occurring in clothing in Camerillo Heights, Ventura County. Incidence of this insect low compared with last year. (Cal. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - SOUTH CAROLINA - Many county agents reported that numerous complaints were received from individuals and physicians of stings to humans. The species is especially numerous in York County (2 children were stung) and additional reports of stings received from Saluda and Richland Counties. (Nettles et al., Oct. 5). OKLAHOMA - Several people hospitalized as a result of direct contact with larvae of this species in south central and south-east areas. (Okla. Coop. Sur.).

A SLUG CATERPILLAR (Euclea chloris) - NORTH CAROLINA - Stinging person in Stanly County. (Wray).

SCORPIONS - SOUTH CAROLINA - Unspecified species abundant in house at Abbeville, September 6. Woman stung and required medical attention. (Nettles et al.). NEBRASKA - Single specimen of an undetermined species taken from a home in Lincoln, causing local alarm. (Bergman).

#### STORED-PRODUCT INSECTS

Stored-grain Insects in Alabama - Survey made in Mobile during week ending October 7 showed the following: INDIAN-MEAL MOTH (Plodia interpunctella) was present in extremely large numbers; CONFUSED FLOWER BEETLE (Tribolium confusum) and RICE WEEVIL (Sitophilus oryza) were also abundant. A GRAIN BEETLE (Pharaxonotha kirschi) and CIGARETTE BEETLE (Lasioderma serricorne) were common and were moderately heavy in all damp areas of warehouses examined. (Lockhart, Seibels).

A PYRALID (Aglossa caprealis) - DELAWARE - Larvae found feeding on stored woolen-lined slippers and socks in Newark. This is a possible new State record. (Burbutis, Mason).

#### BENEFICIAL INSECTS

A CERAMBYCID (Crossidius pulchellus) - TEXAS - Heavy numbers observed attacking broomweed in Sterling County. (Barlemann, Sept. 23). Specimen reared from host. (Gaines).

CAROLINA MANTIS (Stagmomantis carolina) - NEBRASKA - Several concentrated around a home in Lincoln, with other scattered reports being received. (LaBerge).

SYRPHIDS - NEW MEXICO - Adults averaged 1-3 per sweep in alfalfa in Chaves and Eddy Counties. (N. M. Coop. Rpt.).

ICHNEUMONIDS - FLORIDA - Female Messataporus compressicornis collected on grapefruit at Sarasota, Sarasota County, September 23 by C. L. Yax, represents fourth specimen for State Plant Board collection. A male Polistiphaga stupida collected on unknown species of palm at Sanford, Seminole County, on September 21 by G. W. Desin, represents the first male and the second specimen of this species for the State Plant Board collection. (Fla. Coop. Sur.).

MISCELLANEOUS INSECTS

BANDED WOOLLYBEAR (Isia isabella) - DELAWARE - Considerable numbers of larvae noted throughout State. (Burbutis, Mason).

A GEOMETRID (Bapta vestaliata) - SOUTH CAROLINA - Adult collected in light trap at Clemson, April 21, 1960, is a first record of this species in the State. Det. by E. L. Todd. (McAlister).

A NOCTUID (Morrisonia mucens) - SOUTH CAROLINA - Collected in Clemson light trap April 21, 1960, for a first record for the State. Det. E. L. Todd. (McAlister).

WEEVILS - FLORIDA - Listronotus blatchleyi collected at light at Miami, Dade County, on September 17 by D. A. Palmer; first specimen for Florida State Plant Board collection. This is a rare species previously recorded from Homestead, Everglades National Park, and from Flagler County. (Fla. Coop. Sur.). OREGON-Brachyrhinus rugosostriatus invading homes at several Willamette Valley locations during October. (Every).

A LYCID (Caenia dimidiata) - SOUTH CAROLINA - Specimen collected in light trap at Clemson, July 21, 1960, constitutes a first record for the State. Det. by T. J. Spilman. (Nettles et al.).

BOXELDER BUG (Leptocoris trivittatus) - NEBRASKA - Very numerous in eastern portion of State. (Bergman). KANSAS - Adults entering houses to overwinter in Riley County. (Thompson). ARIZONA - Heavy adult populations a problem around homes in some areas of Gila, Navajo and Apache Counties. (Ariz. Coop. Sur.).

HACKBERRY NIPPLE GALLS (Pachypsylla spp.) - NEBRASKA - P. celtidis-mamma extremely numerous in eastern district and invading many residences. (Bergman). KANSAS - Pachypsylla spp. adults entering houses in Riley and Leavenworth Counties. (Smith, Thompson).

BROWN-BANDED ROACH (Supella supellectilium) - WYOMING - Becoming abundant in many apartment houses in Laramie, Albany County. (Fullerton).

A COLLEMBOLA (Entomobrya unostriata) - CALIFORNIA - Heavy population invading a residence in Marysville, Yuba County. (Cal. Coop. Rpt.).

AN OTITID - NEVADA - Large numbers of an undetermined species entering homes in Reno area, Washoe County. (Bechtel, Ting).

CLOVER MITE (Bryobia praetiosa) - WYOMING - Cold weather forcing mites into many homes throughout State. (Fullerton).

MILLIPEDES - NEBRASKA - Residents in eastern area of State reporting many invading homes and sheltered areas. (Bergman). Numerous reports of feeding on ripe strawberries in Lincoln County. (Pruess). KANSAS - Several reports of unspecified species entering homes. (Gates).



LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Perid. saucia	Prod. ornith.	Protoparce sexta	Helio. quinq. zea
<b>ARIZONA</b>							
Mesa 10/3-9				2	117		27
<b>ARKANSAS</b>							
Hope 10/6-12	21		4	1			25
Morrilton 10/6-12	19		5				127
Kelso 10/6-12	11						23
Fayetteville 10/6-12	3						15
<b>CALIFORNIA</b>							
Davis 10/5-11	52		56	6		2	27
<b>FLORIDA</b>							
Monticello 10/4,11		1	2				3
Quincy 10/3, 10					2		12
Gainesville 10/10	1	3					1
<b>INDIANA (Counties)</b>							
Lawrence 9/27-30	2		1		2	4	6
Tippecanoe 10/7-13	1		3		1		15
Vanderburgh 9/30-10/5	4				1		27
							12
<b>KANSAS</b>							
Garden City 9/27-28, 10/1-3,5-9	121	36	81	68	2		414
Hays 10/4,6,8-10,12	20	19	6	13	6		111
Manhattan 9/30-10/12,14	7	66	2	3	5		86
Wathena 10/3,5-7	15	5	3	7	2	2	167
<b>LOUISIANA</b>							
Franklin 10/9,12	5	31	4		9	1	13
Baton Rouge 10/7-13	8	64	1				42
<b>MISSISSIPPI</b>							
*Stoneville 10/7-13	496	634	35	9	84	2	836
<b>NEBRASKA</b>							
Lincoln 10/8-14	12			5	1		69
Alliance 10/1-5	33			6	8		8
North Platte 10/6-12	136	99	73	11	1		586
Bushnell 9/30-10/6	13		13	10			57
<b>TENNESSEE (Counties)</b>							
Maury 10/4-10	5		4		9		2
Robertson 10/4-10	47	9	16	4	16	1	4
Cumberland 10/4-10	36		4	8	8		4
Greene 10/4-10	63		6	14	9	3	7
Blount 10/4-10			4		16		4
Johnson 10/4-10	8	26	8	6	70		36
							36
<b>TEXAS</b>							
Waco 10/8-14	103			103	36	3	266

Additional Collections

BEE T ARMYWORM (*Spodoptera exigua*) - ARIZONA (Mesa 10/3-9) - 561; CALIFORNIA (Davis 10/5-11) - 408; LOUISIANA (Baton Rouge 10/7-13) - 37; MISSISSIPPI (Stoneville 10/7-13) - 545.

\* Two traps - Stoneville

HAWAIIAN INSECT NOTES

Mr. D. P. Wilton reported that on September 23 an inquiry was received from the maintenance department of a local hospital concerning flies which had been noted in several wards and which, on at least 2 occasions, had been found in the operating room, contaminating a surgical field. Specimens were determined by the Health Department as Megaselia scalaris, a common phorid fly in Hawaii. No source of the flies was found in the surgery which is on the fourth floor, but a large number was reared from material collected in a rubbish room on the ground floor. Apparently the flies were reaching the upper floors by a rubbish chute which empties into the ground floor room, probably assisted by a natural updraft through the chute. It was later reported that cleaning up the rubbish abated the problem. Mr. F. A. Bianchi reported that on September 16 he collected a specimen of a BOMBYLIID (Anthrax distigma) at Hanamaulu, Kauai. This is a new island record; the species previously being collected only from Oahu. Two COCCINELLIDS (Archaioneda tricolor fijiensis and Coelophora atrolineata) were sent by N. L. H. Krauss from Fiji in March 1960 for control of GREEN SCALE (Coccus viridis), APHIDS and WHITEFLIES. Propagation has been very successful in the State facilities and continuing liberations are being made on Oahu, Kauai, Maui and Hawaii. A. fijiensis was previously introduced from Fiji in 1906, but failed to become established. A SNAIL (Gulella wahlbergi) (a carnivorous species) was recovered for the first time in Nuuanu Valley, Oahu, on September 8. It was introduced from Durban, South Africa, in 1956-57, and released on Oahu and Maui in several localities. A CARABID (Tefflus zanzibaricus alluaudi) (a predator of the African snail) was recovered at Mahinu'i, Kaneohe, Oahu, on September 14 and makes the second recovery in this vicinity since September 1958. The species was originally introduced in 1952 and reintroduced in 1953, 1957 and 1959.

Two specimens of a CICADELLID (Nephotettix apicalis) were collected in a light trap at Hickam, Oahu, by E. J. Ford, Jr. in October 1959. N. apicalis is the vector of the dwarf disease of rice which causes great damage to the crop in both the continental United States and the Orient. Though these specimens may have been chance strays off some airplane, in view of the number of immigrant species of cicadellids which have become established in the Hawaiian Islands in recent years, it is hoped that N. apicalis has not followed suit and that it can be kept out. In a light trap at Mana, Kauai, the following CICADELLIDS were collected: Circulifer tenellus, Deltocephalus sonorus, Exitianus exitiosus, Scaphytopius loricatus, and Stragania robusta. The first four are fairly recent immigrants to the Islands. In addition, specimens of a HYDROPHILID (Tropidosternus lateralis binotatus) and a small CARABID (Bembidion niloticum batesi) were also collected. These are all new records for the island of Kauai. Mr. L. M. Chilson reported that additional specimens of a BILLBUG (Calendra venusta vestita) were collected at Hickam AFB. This curculionid was first reported by Mr. Chilson at the September meeting of the Hawaiian Entomological Society. He found it crawling in numbers on the sidewalk outside the MATS terminal near the baggage counter. Discussing fly trapping, Dr. C. R. Joyce remarked on the great numbers of Phaenicia sericata trapped on Midway Island, while P. cuprina is absent. On Kwajalein Atoll, the situation is just the reverse, with P. cuprina very abundant and no P. sericata. (Hawaiian Entomological Society, October 10, 1960, meeting).

# FOREST INSECT CONDITIONS IN THE UNITED STATES, 1959

Compiled by the Division of Forest Insect Research

This report of forest insect conditions in the United States is a compilation of material submitted by the forest and range experiment stations of the Forest Service, U.S. Department of Agriculture. The information was obtained from Forest Service aerial and ground surveys, which were supplemented by reports from Federal, State, county, and private agencies, and many individuals.



Forest Service

U.S. Department of Agriculture

Washington, D. C.

April 1960

## CONDITIONS IN FOREST REGIONS, 1959

### Alaska

#### Highlights

1. Infestations by the black-headed budworm and hemlock sawfly pose a new threat to the hemlock-spruce stands in southeast Alaska.

2. The Alaska spruce beetle became epidemic on a part of the Kenai Peninsula.

3. The spear-marked black moth population dropped to low endemic levels near Fairbanks.

#### Defoliators Threaten Hemlock-Spruce Stands

Sampling of insect populations during the summer disclosed large numbers of the black-headed budworm, *Acleris variana* (Fern.), and the hemlock sawfly, *Neodiprion tsugae* Midd., in the hemlock-spruce stands of southeast Alaska. Heaviest populations were in the Cholmondely Sound area; other high populations were in the vicinity of Kasaan Bay and Portland Canal. Other stands in this general area probably harbor large populations of these pests.

Earlier epidemics of the budworm and sawfly that occurred from 1948 to 1955, moved from the southern end of the panhandle northward throughout most of southeast Alaska. Damage to hemlock stands was variable, but moderate to heavy top-killing and tree-killing occurred on more than 100,000 acres (fig. 1). This damage varied from about 10 percent of the stand on moderately defoliated areas to over 50 percent on those more heavily hit. Damage to the spruce stands was much less.



Figure 1. Black-headed budworm and hemlock sawfly damage to hemlock-spruce stands in Alaska, 1948-1955. Grayish trees are killed or top-killed.

Sampling of larval broods in 1959 showed parasitism of the budworm near 20 percent, but almost none for the sawfly. Thus, barring heavy brood mortality caused by other natural factors during the winter, populations of both insects should increase greatly in 1960.

#### Spruce Beetle Invades Recreational Area

The Alaska spruce beetle, *Dendroctonus borealis* Hopk., caused heavy loss of white spruce and Lutz spruce on parts of the Kenai Peninsula. Several thousand trees were attacked and killed in the northeastern part of the Kenai National Moose Range and within several drainages of the adjacent Chugach National Forest.

The Fish and Wildlife Service in Alaska considers the spruce loss on the moose range desirable because dense stands hinder management of the herds. However, inasmuch as losses on the national forest are within recreational areas, controls are planned. Infested trees will be logged or sprayed with toxic oils.

#### Logging Triggers Engraver Outbreak

Several thousand young white spruce trees were killed by *Ips* engraver beetles, presumably *Ips interpunctus* (Eichh.), near the Gerstle River along the Alaska Highway. The beetles, apparently attracted to logging slash and to logs at nearby sawmills, developed large populations in this material and attacked nearby trees.

#### Virus and Parasites Control Birch Defoliator

The spear-marked black moth, *Eulype hastata* L., a looper which lives gregariously in webbed leaves of paper birch, defoliated considerably less forest in 1959 than in the widespread epidemic of 1958. Extensive ground sampling indicated only light feeding confined to a few areas along the Alaska Highway between Tok and Delta Junctions. The epidemic collapsed mostly because of a granulosis virus and insect parasites (primarily braconid and ichneumonid wasps of the genera *Meteorus* and *Aoplus*).

## PACIFIC NORTHWEST

### Highlights

1. The trend of spruce budworm infestation continued downward on all areas except the Fremont National Forest in southern Oregon. No aerial spraying will be done in 1960.

2. The Douglas-fir beetle outbreak in southern Oregon declined, and should subside further in 1960. In southwestern Washington, this beetle attacked windthrown timber extensively and will probably spread to green timber in the spring.

3. Tree-killing by the western pine beetle varied. The Yakima Indian Reservation and adjoining areas contained the only serious infestations.

4. Outbreaks of the mountain pine beetle flared up in young stands of ponderosa pine in various parts of the region.

5. Tree-killing by the balsam woolly aphid decreased in Oregon but the aphid populations increased, indicating a recurrence of heavy kills in the future.

6. The European pine shoot moth was discovered for the first time in the Pacific Coast States. Ornamental pines in the vicinity of Seattle, Washington, were infested.

### Trend of Douglas-Fir Beetle Down in Oregon and Up In Washington

The widespread outbreak of the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk., on and near the Siskiyou, Rogue River, Umpqua, and Siuslaw National Forests in southern Oregon declined from the peak reached in 1958. Tree-killing is significant on approximately 325,000 acres but inspections in June showed light attacks and poor brood development, indicating a continuing downtrend in population.

In southwestern Washington, broods are developing in timber that was windthrown over a wide area in 1958 (fig. 2) and many green trees will probably be killed in 1960. While many of the broken and uprooted trees on the Snoqualmie National Forest and adjacent private lands have been salvaged, efforts by public and private agencies must be continued to prevent increased tree-kills in other areas.

Smaller outbreaks centered on the Umatilla National Forest, Oregon, and on the Okanogan and Wenatchee National Forests and Colville Indian Reservation, Washington.



Figure 2. Windthrown Douglas-fir in a reserve stand along a cutting boundary. The Douglas-fir beetle often increases to epidemic proportions in this situation.

### Western Pine Beetle Infestations Variable

The western pine beetle, *Dendroctonus brevicornis* Lec., killed much ponderosa pine timber on the Yakima Indian Reservation and in adjacent stands on the Gifford Pinchot National Forest, Washington. The insect killed groups of 20 or more trees of all age and vigor classes in 14 epidemic centers on 13,520 acres of the Yakima Reservation. On the Gifford Pinchot National Forest, infestation centers expanded and new ones appeared; the largest was an extension of the epidemic on the Yakima Reservations. These buildups, plus those on Indian lands, suggest further heavy losses unless infested and high-risk trees are logged, or other methods are used for suppression. Elsewhere in the region, the trend of infestations varied.

### Pine Stands Depleted By Mountain Pine Beetle

Ponderosa, lodgepole, and western white pines are the most common hosts of the mountain pine beetle, *Dendroctonus monticolae* Hopk., and outbreaks occurred in stands of all of these species during the year. Beetle populations were high in pole-size ponderosa pine on the Fremont National Forest, Oregon, and in several other areas in both Oregon and Washington. Most pines in heavily infested stands, already weakened by overstocking and competition from white fir, will probably die.

Mortality also was severe in stands of white pine and lodgepole pine on parts of the Gifford Pinchot, Mount Baker, and Wenatchee National Forests, Washington, and on the Mount Hood and Willamette National Forests, Oregon. In these and other locations, stands are depleted rapidly because the beetle continues its attacks in an area until most of the susceptible trees are killed. In many cases, control is not attempted because of the low value of affected stands.

#### Other Bark Beetles Active In Coniferous Stands

Infestations of the Engelmann spruce beetle, *Dendroctonus engelmanni* Hopk., remained low. The main centers occurred in subalpine stands on the Snoqualmie and Wenatchee National Forests, Washington, and the Wallowa-Whitman and Willamette National Forests, Oregon. Generally, timber values in infestation areas are too low to warrant costly control. There are exceptions, of course, especially in recreational areas.

Damage by the Oregon pine engraver, *Ips oregonis* (Eichh.), increased in the region but stands of ponderosa pine on the Wallowa-Whitman National Forest in Oregon were hardest hit. Outbreaks of the fir engraver, *Scolytus ventralis* Lec., were more extensive in many stands than in 1958, but remained relatively unimportant because of the low value of trees in the affected areas. Local centers of tree-killing by the Douglas-fir engraver, *Scolytus unispinosus* Lec., increased in number in drought-weakened young stands on the Mount Hood National Forest, Oregon. Light outbreaks of silver fir beetles, *Pseudohylesinus granulatus* (Lec.) and *P. grandis* Sw., increased for the second year on and near the Mount Baker National Forest, Washington. Although tree-killing by the latter species was far short of that in the 1951 to 1955 epidemic, an uptrend was evident. Direct control of these beetles is usually impractical or unnecessary, and losses are kept within tolerable levels by the proper handling of logging slash and the salvage of affected timber.

#### Trend Of Spruce Budworm Infestations Continues Downward

Defoliation by the spruce budworm, *Choristoneura fumiferana* (Clem.), of Douglas-fir and subalpine and grand firs continued its downtrend on the Wallowa-Whitman and Malheur National Forests, Oregon, and the Yakima Indian Reservation, Washington.

But infestations more than doubled in acreage and increased in intensity on the Fremont National Forest in Oregon. The total area of infestations in the region was 209,280 acres, compared with the 315,440 of 1958.

Based on surveys of egg masses deposited by the 1959 moth population, defoliation in 1960 should be light except on the Fremont National Forest, where some increases are likely. High populations of egg parasites and predators may, however, have an important bearing on future trends. No aerial spraying was done in 1959 and none will be done in 1960.

#### New Locality Record For European Pine Shoot Moth

The European pine shoot moth, *Rhyacionia buoliana* (Schiff.), was reported for the first time in the Pacific Coast States in the spring of 1959 on ornamental red pine near Seattle, Washington. This insect, imported accidentally from Europe many years ago, is a serious pest of young pine plantings, nurseries, and ornamentals in the North-eastern, Central, and Lake States. Although the insect has been present on ornamentals in coastal British Columbia since 1927 without causing much damage, it may be a potential threat to ponderosa pine in both Oregon and Washington. Since the insect is apparently limited to western Washington, eradication is being considered.

#### Biological Control of Balsam Woolly Aphid Intensified

Damage to true firs by the balsam woolly aphid, *Chermes piceae* (Ratz.), decreased for the second successive year in Oregon and Washington, although aphid populations continued to increase in several areas (fig. 3). Subalpine fir stands in Oregon had many newly killed trees in late September, suggesting that heavy kills will again become a problem (fig. 4). In Washington, the largest centers of aphid infestations were on Pacific silver fir in and near the Gifford Pinchot National Forest. One new infestation center of light intensity developed in subalpine fir on the Yakima Indian Reservation, marking the easternmost known range of the aphid in Washington.

Biological control of the aphid was intensified during the year by colonizing additional foreign insect predators. Thirteen species of predators totaling 38,445 individuals were released in infested stands. Nine of these species had not previously been released in the Pacific Northwest.



Figure 3. Fir twigs gouted and killed by balsam woolly aphid.

#### Other Insects Cause Damage

The outbreak of a ponderosa pine needle miner, *Argyresthia* sp., discovered in 1958 on the Fremont National Forest, Oregon, increased in area and intensity. Feeding was conspicuous but damage to host trees was not severe. Defoliation of larch by the larch bud moth, *Zeiraphera griseana* (Hbn.), on the Colville Indian Reservation and on the Okanogan and Snoqualmie National Forests,

Washington, declined sharply. Infestations of the black-headed budworm, *Acleris variana* (Fern.), also dropped to low levels, continuing the decline of 1958.

Outbreaks of the spruce aphid, *Aphis abietina* Wlk., along the coast of Oregon caused light to moderate defoliation of spruce on and adjacent to the Siskiyou and Siuslaw National Forests. In the past this insect was blamed for extensive killing of Sitka spruce in Oregon and Washington before being con-



Figure 4. Heavy attack of balsam wooly aphid on bole of subalpine fir.

controlled by natural factors. Outbreaks in recent years, however, subsided without causing serious damage.

Defoliation and killing of ponderosa pine by the pine needle scale, *Phenacaspis pinifoliae* (Fitch), in the vicinity of fruit orchards in Oregon and Washington continued about the same as in 1958. The principal infestation centers noted in 1959 were in the Hood River Valley in Oregon and the lower Klickitat River drainage in Washington. This type of infestation--in the vicinity of orchards--has occurred during the past several years, and is attributed to a reduction in predators and parasites caused by spray drift from the orchards. This insect has not yet become sufficiently important to warrant control.

The infestation of pandora moth, *Coloradia pandora* Blake, discovered in stands of ponderosa pine west of Sisters, Oregon, in 1958, was controlled by predators and parasites. A similar decline occurred in infestations of the spruce bud moth, *Zeiraphera ratzeburgiana* Sax., in stands of Sitka spruce.

The Douglas-fir tussock moth, *Hemerocampa pseudotsugata* McD., was common on Douglas-fir and white fir in eastern

Oregon and indications are for higher populations in 1960. The fall webworm, *Hyphantria cunea* (Drury), was conspicuous on deciduous forest trees west of the Cascade Range in both States and was abundant on fruit, ornamental, and shade trees in many areas. Some parasitism of the full-grown larvae was reported, but since the webworm passes the winter in the pupal stage, the total impact of parasitism of the population was not determined.

The western tent caterpillar, *Malacosoma plumivale* (Dyar), was prevalent on red alder in western Oregon and Washington, but defoliation of trees was less severe than during the previous two years. An outbreak of an unidentified species of *Neodiprion* sawfly occurred on Douglas-fir in a small area southeast of Puyallup, Washington. The outbreak is expected to subside, however, because the larvae were heavily infected by a fungus disease. Other sawfly species caused minor defoliation of subalpine fir, grand fir, and western hemlock in the Cascade Range of both States.

The fir leaf roller, *Argyrotaenia dorsallana* (Dyar), increased in numbers on true fir trees in eastern Oregon in areas sprayed for spruce budworm control in 1958. Defoliation, however, was not severe and probably will cause no mortality in 1960. A spruce needle miner, *Recurvoria* sp., was reported from the Heppner Ranger District of the Umatilla National Forest in eastern Oregon, where an upward trend of infestations developed locally. The western willow leaf beetle, *Galerucella decora* Say, defoliated willows in extensive areas of Clatsop and Tillamook Counties in northwestern Oregon. An outbreak of the western oak looper, *Lambdina fiscellaria somnriaria* (Hulst), in 1958 in the Willamette Valley collapsed in 1959 without causing measurable damage.

#### Cone And Seed Insects Important Pests

Insects attacking cones and seeds, particularly those of Douglas-fir and ponderosa pine, are important pests in Oregon and Washington nearly every year (fig. 5). On most areas in 1959, however, damage to Douglas-fir seed was less serious because the unusually heavy cone crop offset the losses from the insects. The Douglas-fir cone moth, *Barbara colfaxiana* Kearf., caused little damage and the Douglas-fir cone midge, *Contarinia oregonensis* Foote, caused significant loss of seed only in local areas (fig. 6). Damage to ponderosa pine cones by cone moths was high and the ponderosa



pine seed moth, *Laspeyresia piperana* (Kearf.), greatly reduced seed production in many areas.

California Tortoise-Shell Epidemic In Oregon

The California tortoise-shell, *Nymphalis*

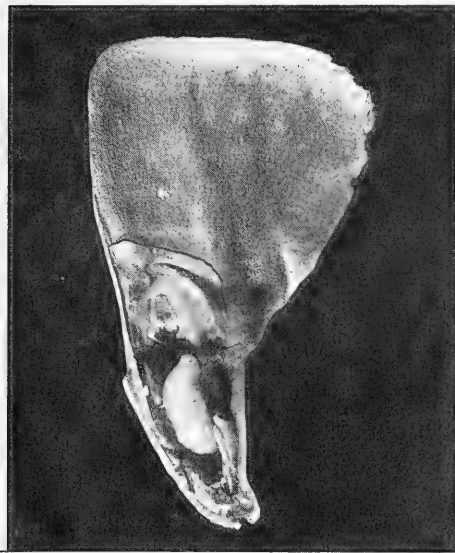


Figure 5. A seed chalcid, *Megastigmus* sp., in seed of noble fir.

*californica* (Bdv.), was epidemic in 1959 on snowbrush at widely separated localities in Oregon. Severe defoliation was reported from the Deschutes, Willamette, and Fremont National Forests. Flights of the butterfly attracted much attention during late August and early September.



Figure 6. Damage to cones of Douglas-fir caused by the Douglas-fir cone moth, *Barbara colfaxiana* Kearf.

## California

### Highlights

1. Timber losses caused by several species of bark beetles were the highest of any recent year. Tree-killing will probably increase in 1960.

2. Epidemic infestations of the lodgepole needle miner continued unabated at Yosemite National Park. Aerial spraying at Tuolumne Meadows suppressed populations and prevented tree-killing in this valued recreational area.

3. Widespread infestations of the black pine leaf scale developed in Stands of sugar pine at several places in the state; damage in local areas was severe.

4. The density of spruce budworm populations increased in the Warner Mountains. If this situation continues, aerial spraying may be needed to protect the fir resources.

5. The sugar pine cone beetle destroyed a large percentage of the sugar pine cone crop; other cone and seed insects took toll of seeds of other conifers.

6. An incipient outbreak of the pandora moth was discovered in San Diego County--the first in the State for several years.

### Outbreaks Of Western Pine Beetle Severe

After several years of low losses, the western pine beetle, *Dendroctonus brevicornis* Lec., developed many serious outbreaks in ponderosa and Coulter pine across California. One of the most serious was on the Sierra National Forest from 4,000 to 6,000 feet elevation, where groups of trees, sometimes including 20 or more, were attacked. In Siskiyou County, infestations increased on several thousand acres. Heavy group loss

also occurred on some 150,000 acres in parts of Shasta and Lassen Counties. In southern California, many Coulter pines were killed at several locations; in Riverside County, groups of 90 or more trees were killed late in the season.

In some places outbreaks were sparked by forest fires where beetle broods developed in scorched trees; in others they developed in trees struck by lightning. Warm, dry weather during winter and early spring favored beetle broods in all areas.

#### Mountain Pine Beetle Infestations Most Abundant In Decade

Infestations of the mountain pine beetle, *Dendroctonus monticolae* Hopk., in sugar pine were more numerous and widespread than at any time in the past 10 years. The beetles killed more lodgepole pine in many stands, and began new infestations in pole-size stands of ponderosa pine in Modoc County.

The most critical outbreaks in sugar pine were in the southern part of the westside Sierra in Calaveras, Mariposa, Madera, and Tuolumne Counties. In some places, trees of all ages were killed in groups. Mortality over large areas averaged one or more pines per quarter section. Several widespread outbreaks of lesser intensity also occurred in the northern part of the westside Sierra. Infestations covered several thousand acres in both Shasta and Yuba Counties, in Yosemite National Park, and in the adjacent Mather-Crane Creek drainages, losses are the highest in several years.

Infestations in lodgepole pine increased but became critical in only a few areas. The outbreak in the Dingley-Delaney Creek drainages near Tuolumne Meadows, Yosemite National Park doubled that of 1958, and a new loss center developed in the vicinity of Cathedral Lake where stands had been weakened by needle miner defoliation. Other centers of severe infestations in lodgepole pine occurred at Lassen Volcanic National Park, Lassen County; on the Plumas National Forest in Plumas County; and, in local areas in Siskiyou County east of Mount Shasta.

Mountain pine beetle outbreaks in stands of ponderosa pine were few and small. The insect infested pole-sized stands in the Warner Mountains of Modoc County, spreading to adjacent stands on the Fort Bidwell Indian Reservation.

#### Tree-Killing By Jeffrey Pine Beetle Increasing

The rate of tree-killing in stands of Jeffrey pine by the Jeffrey pine beetle,

*Dendroctonus jeffreyi* Hopk., showed signs of increasing in several parts of California. The outbreak, covering some 100,000 acres on the Cannell Meadows Working Circle, Sequoia National Forest, grew larger, and a new infestation developed on some 9,000 acres near Hessian Meadows on the Inyo National Forest. Other infestations were reported in Sierra, Shasta, and Lassen Counties and in the recreational areas around Lake Arrowhead and Big Bear Lake in San Bernardino County.

#### Populations Of Pine Engravers Up

The pine engraver beetles were active across the State, damaging and killing an increasing number of trees. Both the Oregon pine engraver, *Ips oregonis* (Eichh.), and the California five-spined engraver, *Ips confusus* (Lec.), top-killed mature pines in many areas and killed some smaller trees (fig. 7). Engraver beetles also were associated with many of the outbreaks of western pine beetle in ponderosa and Coulter pines and, to a lesser degree, the mountain pine beetle in sugar pine. Trees top-killed by the engravers now are subject to attack by *Dendroctonus* species, thus adding to the likelihood of increased losses. The pine engravers were particularly abundant at the following locations: Hat Creek drainage, Shasta County; Slate Creek drainage, Tahama County; the Rockerby area, Yuba



Figure 7. Top-killing and tree-killing caused by *Ips* engravers in pine stands of California.

County; Dark Canyon, Sierra County; Bass Lake area, Madera County; and throughout the foothill country from Shasta County to Tulare County. Pine stands in southern California also were severely affected and, because infestations occurred in recreational areas, losses were especially serious.

#### Fir Engraver Increases In Numbers

Infestations of the fir engraver, *Scolytus ventralis* Lec., in red and white fir stands were spotty, but losses were heavier than in 1958. Near Bear Valley in Placer County, several thousand trees were killed, with the loss concentrated at two locations in Tulare County. The trend of infestations in all affected areas is not clear, but heavier losses can be expected in most susceptible stands in 1960.

#### New Outbreaks Of Douglas-Fir Beetle Localized

Losses in Douglas-fir caused by the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk., remained low throughout most of northwestern California, but spot outbreaks developed in parts of that area and the westside Sierra. Beetle activity in the Sierras revived, after many quiet years, in the Lost Creek drainage in Plumas County and near Green Burney in Shasta County. In the North Coast subregion, the most serious problem was in part of Humboldt County where heavy broods developed in windthrown trees.

#### Douglas-Fir Engraver Active

Activity of the Douglas-Fir engraver, *Scolytus unispinosus* Lec., was common in Sonoma, Mendocino, and Humboldt Counties in the late winter and spring. Drought and logging slash were probably the main factors contributing to increases of this insect. Some outbreaks are continuing. The size of the problem will be apparent only when currently infested trees begin to show evidence of infestation in the summer of 1960.

#### California Flatheaded Borer Active In Southern California

Tree-killing by the California flatheaded borer, *Melanophila californica* Van Dyke, was confined in large part to the forested areas in southern California. Although Jeffrey pine was the predominant host of the borer

in most affected areas, ponderosa and Coulter pines were also killed in many areas. Controls, wherever applied, lessened damage markedly from that of previous years.

#### Aerial Spraying Suppresses Pine Reproduction Weevil

The pine reproduction weevil, *Cylindrocop-turus eatoni* Buch., was sufficiently destructive to young pine plantations in parts of the central Sierras to require aerial application of insecticides for suppression. Two plantations totaling 2,050 acres on the Stanislaus National Forest were sprayed with DDT late in May; two smaller areas on the Eldorado National Forest were treated early in June. Infestations in the extensive plantations in northeastern California were not severe, and no control action was taken.

#### Scale Insect Active

The black pine leaf scale, *Nuculaspis californica* Coleman, developed outbreaks in stands of sugar pine at several places during the year. The insect caused foliage yellowing in four of the national forests in the North Coast subregion, and two others in the central part of the State. In each of the locations, infestations occurred on several hundred to several thousand acres. The ultimate effects of the scale on the host trees are not now known, but damage is such that some of the land managers already have begun salvage of the more heavily infested trees.

#### Lodgepole Needle Miner Outbreak Continues In Yosemite

The lodgepole needle miner, *Recurvaria milleri* Busck, continued its outbreak in the high-elevation stands of lodgepole pine in Yosemite National Park. Trees on some 60,000 acres are in danger unless infestations subside or controls protect them in the near future. An additional smaller infestation covered about 1,300 acres in Sequoia-Kings Canyon National Park. A suspect area of infestation was detected near China Lake on the Sierra National Forest.

Spray protected high-value recreational forests in Yosemite National Park. The formulated spray, applied from helicopter at a rate of 2 pounds of malathion in 20 gallons of diesel fuel per acre, proved effective. The spraying was divided into two

parts: 800 acres were sprayed in July to kill the moths which were in flight at that time, and about 2,600 acres were sprayed in late August to kill the young larvae as they emerged from the eggs. The effectiveness of the spray directed at the moths was estimated at 90 percent; that directed at the larvae, about 70 percent.

#### Spruce Budworm Populations Increase In Warner Mountains

The spruce budworm, *Choristoneura fumiferana* (Clem.), is limited in its distribution in California to the Warner Mountains in Modoc County. In the North Warners, infestations have persisted in stands of White fir for many years without causing appreciable damage. During 1958, however, defoliation increased and, for the first time, infestations were found in the South Warners. In 1959, populations in both areas increased and defoliation was noticeable on 2,800 acres. If population densities remain heavy, it may be necessary to spray infested areas.

#### Cone And Seed Damage Severe

Several species of cone and seed insects caused serious damage throughout the State to seed crops that were already generally light. The sugar pine cone beetle, *Conophthorus lambertianae* Hopk., destroyed almost all of the sugar pine cones (fig. 8), and other species of the same genus severely damaged ponderosa and Jeffrey pine cones. Damage to the Douglas-fir seed crop was spotty, ranging from light in the western portion of the Douglas-fir region to very heavy in the eastern portion. Larvae of the cone moths, *Dioryctria abietella* (D.&S.) and *Barbara colfaxiana* Kearf., were responsible for most of the Douglas-fir cone damage. The Douglas-fir seed chalcid, *Megastigmus spermotrophus* Wachtl., damaged additional seed.

#### Miscellaneous Insects Take Their Toll

The Great Basin tent caterpillar, *Malacosoma fragile* (Stretch), defoliated woody browse plants on large areas on the Lassen, Tahoe,

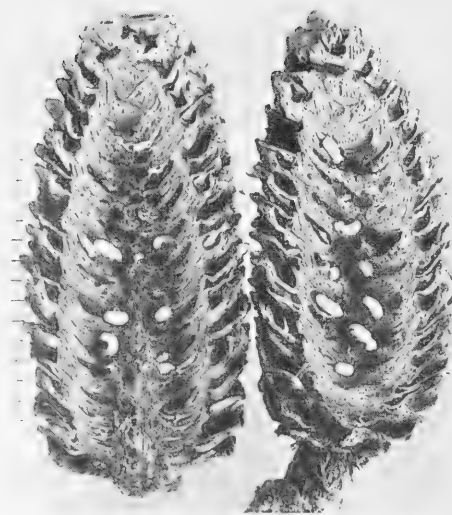


Figure 8. *Conophthorus* beetles destroy seeds in cones of sugar pine.

and Inyo National Forests. The California tortoise-shell butterfly, *Nymphalis californicus* Bdv., striped foliage from ceanothus in parts of Humboldt County. Large populations of the silver-spotted tiger moth, *Halisidota argentata* Pack., were active in many parts of the State. The pandora moth, *Coloradia pandora* Blake, was observed in the Laguna Mountains and at Cuyamaca Rancho State Park in San Diego County.

Infestations of a *Chermes* species (probably *pinicorticis* Fitch), on white fir and Douglas-fir were widespread through the State, and the gouty pitch midge, *Retinodiplosis inopsis* (O.S.), was very abundant on parts of the Lassen and Klamath National Forests. The lodgepole terminal weevil, *Pissodes terminalis* Hopk., killed terminal of that pine from Shasta County to Inyo County. The Douglas-fir tussock moth, *Hermerocampa pseudotsugata* McD., epidemic in stands of white fir on the Stanislaus National Forest in 1956, was at a low level in 1959.

### Intermountain Region

#### Highlights

1. The mountain pine beetle continued in outbreak in many parts of the region. Conditions were most severe in stands of lodgepole pine in Utah, Idaho, and Wyoming.

2. Serious infestations of the Engelmann spruce beetle occurred in the high-elevation spruce stands in Utah and Wyoming and in other spruce stands in Montana and north Idaho.

3. Approximately 4 million acres of spruce-fir timber in Montana and Idaho are infested by the spruce budworm. This includes parts of some areas sprayed several years ago.

4. A new outbreak of pandora moth covered approximately 15,000 acres of lodgepole pine forest in the Uinta Mountains of Utah.

5. Infestations of the lodgepole needle miner were widespread in Idaho, and caused severe damage.

#### Mountain Pine Beetle Infestations Widespread

The mountain pine beetle, *Dendroctonus monticolae* Hopk., is a major pest of all the important pine species in the Intermountain Region. Severe infestations occurred in many areas. Stands of old-growth western white pine in Montana and north Idaho were heavily infested; the average rate of tree-killing was 1 to 5 percent of the green stands. Tree mortality in 1959 was about 2½ percent of the stand volume on the Clearwater National Forest, and in other parts of Idaho and western Montana.

Mountain pine beetle infestations ranged from low endemic to highly epidemic in lodgepole pine stands. Several infestations in Montana and north Idaho were reported at low levels and one outbreak under observation for several years decreased 64 percent in 1959. In northern Utah, western Wyoming and southern Idaho, however, infestations were epidemic and severe tree-killing was widespread. In Idaho, epidemic infestations occurred on the Targhee and Sawtooth National Forests and on non-Federal lands near Kilgore. In Wyoming, epidemics were reported on the Teton National Forest and in Grand Teton National Park. An extensive outbreak on the Wasatch National Forest, Utah, continued and a new, threatening infestation developed on the Ashley National Forest. Major effort was made during the year to reduce the rate of tree-killing in all seriously affected areas and, although control measures were successful where applied, new outbreaks and the expansion of older ones indicate a continuing serious problem.

Second-growth ponderosa pine often is killed by the mountain pine beetle in dense, crowded stands. Two serious infestations in such stands occurred in the Intermountain Region. One, which started at the north end of Lake Tahoe in Nevada, in 1949, increased in scope and severity each year

until 1958. Then an estimated 6,000 infested trees were removed from the area in an effort to suppress the beetle. Control was not continued in 1959, however, and residual populations increased, killing an additional 8,000 trees. The second infestation was found on the Boise National Forest in Idaho in 1958, and approximately 1,500 infested trees were cut, decked, and burned. Currently, the rate of tree-killing in the latter area is low, with only 500 trees killed during 1959.

#### Engelmann Spruce Beetle Infestations Severe

The Engelmann spruce beetle, *Dendroctonus engelmanni* Hopk., is one of the most destructive insects in the Intermountain Region, and severe outbreaks have been common for many years. In the past decade, several widespread epidemics have occurred in north Idaho, Montana, and Utah. Vestiges of these infestations, as well as newly developed ones are causing serious depletion of the spruce stands. There are some indications that beetle activity is decreasing in most of the previously infested drainages in Montana and north Idaho. However, a serious infestation remains on the Kootenai National Forest, and will require suppression to prevent its spread. Serious infestations also continue in old outbreak areas in western Wyoming, and in the newer ones in northeastern Utah. On the Bridger National Forest in Wyoming, an epidemic in the vicinity of Gypsum Creek has been contained by logging, chemical treatment, and the use of trap trees. Woodpeckers and parasitic insects also helped to reduce beetle populations, but recent investigations point to the need of additional control to prevent flareups and spread in this area.

A large-scale outbreak developed in high-elevation spruce stands on the Uinta, Ashley, and Wasatch National Forests in 1958. An immediate program of suppression drastically reduced the beetle population. Nevertheless, the outbreak still continues and will probably kill even more trees in 1960. Natural agents controlled outbreaks in a 100-acre area on the Targhee National Forest and two centers on the Teton National Forest. Other outbreaks showed strong indications of increasing. Four of these at separate locations in Utah contained over 80,000 infested trees, and were considered potentially explosive.

## Other Major Bark Beetles Cause Losses

Increases in the rate of tree-killing by the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk., were reported from several areas. Although centers of beetle activity were numerous in Montana, northern Idaho, and western Wyoming, there were no large outbreaks reported from any of these areas.

The western pine beetle, *Dendroctonus brevicomis* Lec., was apparently more active on the Lolo and Nezperce National Forests in Montana and Idaho than during the past few years. In general, attacked trees were few in number and widely scattered. Some, however, were in small groups, indicating a continuation of infestations in 1960. Eng-raver beetles were associated with pine beetle attack in several instances, especially in smaller trees.

More outbreaks of secondary bark beetles were reported from Montana and north Idaho during 1959, indicating increased activity. Many of the infestations were *Ips oregonis* (Eichh.) in ponderosa pine.

The fir engraver, *Scolytus ventralis* Lec., was epidemic in the Wheeler Peak Area on the Humboldt National Forest, Nevada. The insect also killed many trees in southern Utah.

## Spruce Budworm Infestations Widespread

Epidemic infestations of the spruce budworm, *Choristoneura fumiferana* (Clem.), which have plagued Douglas-fir forests in central Montana and northern Idaho for the past 10 years, changed little during 1959. Most of the Douglas-fir type east of the Continental Divide in Montana is infested to some degree, and much of the acreage sprayed to suppress populations in prior years is repopulated to varying degrees. West of the divide, tree damage from defoliation is not severe with a single exception; in the Craig Mountain area south of Lewiston, Idaho, the budworm has persisted in mixed stands of Douglas-fir and grand fir for at least 10 years, killing mature trees and those in the understory. The scope and severity of spruce budworm infestations in Montana and northern Idaho is indicated by the following data:

### Acres

Infested during period 1947 - 1959.....	5,888,000
Sprayed with insecticide, 1953 and 1955-57.....	2,169,000
Resprayed during period, cumulative total.....	163,500
Controlled by natural agents.....	276,000
Infested in 1959.....	3,442,950

In southern Idaho, budworm infestations increased in scope and intensity from 1952 to 1957. During this time, approximately 2,030,000 acres were treated with aerial spray. No spraying was done in 1958 or 1959 and, with minor exceptions, all remaining infestations are considered to be static or decreasing. Infestations in 1959 occurred on 499,000 acres of the Payette, Salmon, Sawtooth, and Targhee National Forests. Of this total, only 59,000 acres were heavily damaged.

On the Salmon National Forest, a change in the pattern of infestation was noted in 1959; for the first time in 5 years defoliation occurred in small broken areas rather than in large continuous blocks. No new infestation centers were discovered and defoliation was severe on only 10,000 of a total of 165,000 acres. A decrease in severity of infestations is predicted for 1960.

On the Sawtooth National Forest, large fluctuations in the density of budworm populations have occurred from year to year since 1949. A strong rise in 1957 was followed by a definite decrease in 1958. The trend was upward again in 1959, and severe defoliation is probably in store for 1960.

Infestations on the Targhee National Forest were first discovered in 1956 and populations in seriously affected areas were suppressed by aerial spraying in 1957. Although some reinfestation occurred in sprayed areas in 1958, defoliation was not severe; in 1959 only 4,000 of a total of 204,000 acres were heavily damaged. Parasites and predators will probably cause a downtrend in the infestation in 1960. Although considerable budworm damage has occurred on the Payette National Forest during the past few years, only 5,000 acres are now known to be infested.

In general, spruce budworm infestations in southern Idaho were relatively less serious than in past years. High populations in some areas could intensify and spread, but are not expected to do so in 1960.

## Sawflies In Outbreak Status

Several outbreaks of sawflies occurred in the coniferous forests of the Intermountain Region during the year; at least six different species have been taken from various hosts. An undescribed *Neodiprion* species severely defoliated lodgepole and ponderosa pine in and adjacent to the Lewis and Clark National Forest in Montana. *N. burkei* Midd. stripped almost all old-growth needles from

lodgepole pine on some 5,000 acres near Cascade Reservoir in Idaho. Both of these infestations will probably moderate in 1960. A species of the *N. abietis* complex, known before only from the Craters of the Moon National Monument in Idaho, appeared in outbreak numbers in 1959 on the Sawtooth National Forest and in Owyhee County.

An unknown species of sawfly infesting pinyon pine was discovered for the first time in 1959 on a 75-square-mile area near Pioche, Nevada. This outbreak apparently started a few years ago in Hulse Canyon, where some 90 percent of the trees now are dead. Pinyon pines are not valuable for timber, but many are used for Christmas trees.

The larch sawfly, *Pristiphora erichsonii* (Htg.), a major forest insect in the Eastern States, was discovered in 1958 near Missoula, Montana, for the first time since 1944. Defoliation in 1959 was noted only in large patches of western larch in the Blackfoot River drainage near Missoula. To what extent infestations occur elsewhere in Montana is not known. Two other *Pristiphora* species, both as yet undescribed, were reared in 1959 from western larch near Sandpoint, Idaho.

#### Pine Butterfly A Potential Threat

At periodic intervals, the pine butterfly, *Neophasia menapia* (F. & F.) erupts in epidemic numbers in the Intermountain Region and poses a severe threat to valuable stands of ponderosa pine. Because of this, a close watch of forest stands is kept to detect the first signs of increasing populations. During 1959, this butterfly was numerous in parts of northern Idaho and western Montana. Though adults were observed hovering near the tops of tall trees on the Nezperce and Clearwater National Forests, there was no indication of localized outbreak centers. Continued surveillance is planned.

#### Larch Casebearer New To Region

The larch casebearer, *Coleophora laricella* (Hbn.), a recent introduction in the Intermountain Region, is now known to occur throughout most of northern Idaho and northeastern Washington. In 1959, the insect ranged northwest as far as Colville, Washington, north to Bonners Ferry, Idaho, east to the Idaho-Montana boundary, and south to Bovill, Idaho. This range, encompassing 8,000 square miles, in twice the area of infestation known in 1958. In contrast to the

rate of spread, severity of infestations in 1959 changed but little and defoliation was visible on only 20,000 acres. Samples indicate that less than 1 percent of the population was parasitized in 1959 and by only one species, a wasp, *Spilochalcis albifrons* (Walsh). Control by natural agents is doubtful unless additional parasites are introduced.

#### Tussock Moths--A Continuing Problem

Several outbreaks of tussock moths occurred in the Intermountain Region during the past several years. The many different host species attacked, suggest that more than one species of moth may be involved. The Douglas-fir tussock moth, *Hemerocampa pseudotsugata* McD., is known to be the species that erupted in Owyhee County, Idaho, in 1957. This infestation, on some 5,000 acres, was controlled by a virus in 1958. Only one small spot infestation was found in the general area in 1959. However, the same species may be involved in an epidemic discovered on about 5,000 acres of white fir on the east side of the Snake Range, Humboldt National Forest, Nevada, in the late fall. The insect probably has been active in this area for about 5 years, and conditions indicate an increase in scope and severity of defoliation in 1960. Three other outbreaks of the same or a closely related species also were reported in the Intermountain Region. One of these, in the vicinity of Carson City, Nevada, occurred on bitterbrush and persisted for two or more years, often killing twigs, but not causing much mortality to the browse plant. Another outbreak, near Idaho City, Idaho, covers some 10,000 acres of ceanothus, willow, ninebark, ribes, and rosebrush. A virus disease practically eliminated the entire infestation during this first year of defoliation.

On the Targhee National Forest, a tussock moth was found for the first time in 1959 feeding on dwarfmistletoe on lodgepole pine. This unusual sort of larval feeding could prevent seed formation and consequently be beneficial in reducing mistletoe spread.

#### New Outbreak of Pandora Moth In Utah

In mid-June, an outbreak of the pandora moth, *Coloradia pandora* Blake, ranged across 15,000 acres of lodgepole pine forests near the Summit Springs Ranger Station in the Uinta Mountains, Ashley National Forest, Utah. At the time of discovery, caterpillars

were mature, indicating that the infestation first occurred in the area in 1958 or earlier. Trees on approximately 300 acres were severely defoliated; about 1 percent of them were completely stripped. Inspection of broods during the summer and later in the year revealed that only small percentages of larvae and pupae were parasitized or diseased and there was no evidence of predation by small mammals. The course of the outbreak cannot be predicted, but since the young larvae will inflict only minor damage on host trees in 1960, suppression can wait until 1961.

#### Lodgepole Needle Miner A Potential Threat

The lodgepole needle miner, *Recurvaria milleri* Busck, is an important enemy of lodgepole pine in the Intermountain Region. Currently an outbreak exists on approximately 104,000 acres on the Cassia division of the Sawtooth National Forest and on the Targhee National Forest in Idaho. Although the infestation has been in this area for 2 years, there has been no tree-killing to date and none is expected in 1960. Populations will undoubtedly continue to increase for the next few years, and damage may become severe in the future.

#### Other Insects Cause Defoliation and Stunt Growth

Several other species of forest insects occurred in abundance in the Intermountain Region during 1959. The aspen leaf miner, *Phyllocnistis populiella* Chamb., a serious defoliator in western Wyoming and southeastern Idaho in the past decade, was widespread. Repeated defoliation caused patch-killing of aspen in several locations. Further, stands over large areas have been so weakened that trees currently are producing only stunted foliage, and additional tree mortality is expected.

The alder flea beetle, *Altica ambiens* (Lec.), occurred over large areas of streamside cover in northern Idaho and northwestern Montana.

Defoliation of lodgepole and whitebark pine by a pine-feeding budworm, *Choristoneura* sp., was noticeable in eastern Montana, in Yellowstone National Park in Wyoming, and in stands of ponderosa pine near Helena, Montana. In all areas, infestations were associated with the spruce budworm in adjacent or intermixed stands of Douglas-fir.

The Engelmann spruce weevil, *Pissodes engelmanni* Hopk., was abundant in the Kishenehn Creek drainage in Glacier National Park, where persistence of infestations caused severe stunting. A gouty pitch midge, *Retinodiplosis* sp., was active in many parts of the region during the year. Lateral branch tips of pines on several thousand acres of plantations on the Kaniksu National Forest in Idaho were damaged. A pine tipmoth, *Rhyacionia* sp., has persisted for many years on the Long Pine and Sioux divisions of the Custer National Forest in Montana, and successive damage to terminals stunted and deformed large numbers of young ponderosa pines.

Epidemic populations of tent caterpillars, presumably *Malacosoma fragile* (Stretch), hit cottonwoods along all creek bottoms in the Wheeler Peak area, Humboldt National Forest, Nevada. Spot infestations of an undetermined scale insect infested pinyon pine in scattered places in the same areas.

#### Mealybugs, Aphids, And Mites Reduce Tree Vigor

Outbreaks of several species of sucking insects weakened trees of coniferous forests throughout the region. A spruce mealybug, *Puto* sp., in outbreak in stands of Engelmann spruce in southern Utah for the past several years, remained active in 1959. It now is prevalent on some 60,000 acres at three separate locations on the Fishlake and Dixie National Forests. The persistence of the mealybug for long periods causes deformity to trees, kills off reproduction, and reduces the vigor of overstory trees. An outbreak of another mealybug (species unknown), found in stands of true fir north of Hazard Lake on the Payette National Forest in Idaho in 1958, collapsed in 1959 before damaging the infested trees. A new infestation of the same species was found 10 miles west of Hazard Lake during the summer.

The Cooley spruce gall aphid, *Chermes cooleyi* Gill., occurred in large numbers on ornamental spruce, Engelmann spruce, and Douglas-fir trees throughout Montana and northern Idaho. At some locations, infestations caused severe yellowing of needles. None, however, caused tree mortality or an appreciable killing of twigs and branches. A fir aphid, *Cinara* sp., was unusually abundant throughout grand fir stands in northern Idaho and on parts of the Kootenai National Forest in Montana. A woolly aphid, species unknown, was reported abundant on alpine fir east of the Continental Divide.



Infestations of the spruce spider mite, *Oligonychus ununguis* (Jac.), in Montana and northern Idaho lessened in scope and severity, but damaged trees at scattered locations on the Deerlodge, Lewis and Clark, Helena, and Gallatin National Forests in Montana, and in Yellowstone National Park. Although mite populations were low in these areas, damage to stands from the outbreaks of prior years is clearly visible.

#### Suppression Effective Against Black Hills Beetle

Infestations of the Black Hills beetle, *Dendroctonus ponderosae* Hopk., on the Dixie Na-

tional Forest and at Bryce Canyon National Park in southern Utah were much reduced from levels of prior years. Sustained control efforts were primarily responsible. The downward trend of infestations first reported in 1958 continued in 1959. The severe drought in 1959 may, however, bring back high populations unless suppressive controls are continued. Some 2,200 infested trees on the national forest and about 200 in the national park require treatment during 1960 to prevent an upsurge of populations and increased tree-killing. Another infestation was reported late in the year at Wheeler Peak on the Humboldt National Forest in Nevada.

### Central and Southern Rocky Mountains

#### Highlights

1. Spruce budworm infestations in southern Colorado and northern New Mexico expanded to cover more than 1 million acres. Increases in scope and severity are indicated for 1960.

2. The Engelmann spruce beetle continued to be a serious problem in spruce stands adjacent to timber sales in southern Colorado and at one location in northern New Mexico. Large numbers of beetles in cull material may cause new outbreaks.

3. A new outbreak of pandora moth was discovered in stands of lodgepole pine along the Colorado-Wyoming boundary.

4. Infestations of the Black Hills beetle increased greatly in stands of ponderosa pine in north-central Wyoming and along the Front Range in Colorado.

5. Additional defoliation by the Douglas-fir tussock moth and the New Mexico fir looper was prevented by timely suppression in outbreak areas in New Mexico and Arizona.

#### Spruce Budworm Epidemic

Infestations of the spruce budworm, *Choristoneura fumiferana* (Clem.), more than doubled in size in stands of Douglas-fir and true fir in southern Colorado, northern New Mexico, and Arizona. The acreages affected in 1959 by degree of defoliation are as follows:

	Light (acres)	Moderate (acres)	Heavy (acres)
Colorado.....	208,860	133,480	7,260
New Mexico.....	469,580	124,260	25,440
Navajo Indian Reservation, Ariz.....	50,500	29,600	3,200

In Colorado outbreaks are most serious on the Pike, Rio Grande, and San Juan National Forests and adjacent private lands. Incipient infestations were found on the Uncompahgre and Routt National Forests. The infestation on the Pike Forest was first observed in 1958; damage to trees, except in small localized areas, has been light. Infestations have persisted on the Rio Grande National Forest for about 16 years. Moderate to heavy defoliation has occurred every year since 1954, killing many trees in both the understory and overstory. Outbreaks on the San Juan National Forest are extensive. Top-killing and scattered tree-killing are noticeable throughout the fir type on the eastern edge of the forest. Greater damage is expected in 1960.

Low parasitism of the budworm in southern Colorado and the increase in the number of egg masses deposited by the 1959 flight of the moth indicate a continued uptrend in populations.

The spruce budworm caused heavy defoliation in the fir type on the Carson and Santa Fe National Forests and adjacent private lands in New Mexico, and on the Navajo Indian Reservation in Arizona. Investigations in these areas point to a further increase in populations in 1960.

#### Black Hills Beetle Destructive

The Black Hills beetle, *Dendroctonus ponderosae* Hopk., increased throughout the ponderosa pine type in the Bighorn Mountains of Wyoming and the Front Range of Colorado. Epidemics exist on private lands west and northwest of Denver, Colorado. The outbreak in the Black Hills of South Dakota is

being controlled with chemicals. In northern New Mexico, infestations are decreasing. The beetle was found attacking limber pine in the San Mateo Mountains in central New Mexico in 1959--the first time the insect was reported that far south.

#### Logging Stimulates Spruce Beetle Activity

Several outbreaks of the Engelmann spruce beetle, *Dendroctonus engelmanni* Hopk., in the spruce forests of Colorado and New Mexico resulted from a buildup of beetle populations in cull material in logged areas (fig. 9). The beetles attack and develop in the shaded and under sides of cull logs where they are protected from enemies and the cold of winter by the deep snow. One or two years after logging, broods mature and emerge to attack nearby standing trees.



Figure 9. The helicopter is useful in surveying for Engelmann spruce beetle outbreaks at high elevations in central Rocky Mountains.

The more important infestations in Colorado were on the Uncompahgre and San Juan National Forests, where over 21,000 trees were killed around logging areas. Many beetles also inhabit cull logs on 45 separate timber-sales areas on these and other national forests in southern Colorado, and will be a threat to trees after emergence next June.

In New Mexico, the spruce beetle was reported in outbreak only in one area, near Chama. Probably this infestation also developed in logging slash.

#### Less Pine Bark Beetle Damage In Arizona and New Mexico

Mortality of ponderosa pine throughout Arizona and New Mexico caused by the

complex of *Dendroctonus* and *Ips* beetles continued to decline in 1959. *Ips* beetles, usually *I. ponderosae* Sw., often start the attack in the top section of the trees; then *D. barberi* Hopk., *D. convezifrons* Hopk., and *D. parallelcolliis* Chap., kill the lower sections. Concentrations of dead trees were seen only on part of the Lincoln National Forest in New Mexico and on the San Carlos Indian Reservation in Arizona.

#### Other Bark Beetles Cause Significant Losses

Other bark beetles, destructive to coniferous stands in the central and southern Rocky Mountains, were in outbreak only in small areas. The fir engraver, *Scolytus ventralis* Lec., increased on the Lincoln National Forest and the Mescalero Indian Reservation in southern New Mexico. An outbreak of long standing continued unabated in the Sandia Mountains east of Albuquerque. The Arizona five-spined engraver, *Ips lecontei* Sw., was abundant in second-growth stands of ponderosa pine near Prescott, Arizona. The mountain pine beetle, *Dendroctonus monticolae* Hopk., increased in stands of limber pine on the Shoshone National Forest in Wyoming.

#### Intensity of Douglas-fir Beetle Infestations Variable

Outbreaks of the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk., were reported from many areas in the central and southern Rocky Mountains. The total affected area of the Pike, Rio Grande, Roosevelt, San Isabel, and San Juan National Forests in Colorado and the Medicine Bow National Forest in Wyoming lessened in 1958. Areas of activity increased on the Shoshone National Forest and in the South Bighorn Mountains in Wyoming. In New Mexico, tree-killing was heaviest on parts of the Santa Fe and Coronado National Forests, being greater than in 1958.

#### Fir Tussock Moth and Looper Outbreaks Suppressed

Outbreaks of Douglas-fir tussock moth, *Hermerocampa pseudotsugata* McD., in 1958 at four locations in New Mexico and Arizona were controlled by aerial spraying in 1959. Except for a small infestation in the Sandia Mountains east of Albuquerque, populations were suppressed effectively. An outbreak of the New Mexico fir looper, *Galenara consimilis* Hein., occurred on an area of 1,500 acres on the Lincoln National Forest in New Mexico. This was the first recur-

rence of this major pest since 1952. Aerial spraying to suppress the tussock moth in the same area was also successful in reducing looper populations.

#### Outbreaks of Tent Caterpillars Subside From Natural Causes

Infestations of the Great Basin tent caterpillar, *Malacosoma fragile* (Stretch), have been widespread in southern Colorado and northern New Mexico for the past 10 years, and repeated defoliation killed many aspens. In 1959, natural factors drastically reduced populations over wide areas.

### Lake States and Central States

#### Highlights

1. The spruce budworm defoliated increasingly more trees over a wider area in Minnesota, and moderate to serious infestations now exist on over 1 million acres in the northern part of the State.

2. The jack pine budworm severely defoliated its host in localized areas in Wisconsin, Michigan, and Minnesota.

3. Sawflies, shoot moths, pine weevils, hardwood defoliators, and other miscellaneous insect pests continued destruction in many areas.

#### Spruce Budworm Infestation Trend Upward

Infestations of the spruce budworm, *Choristoneura fumiferana* (Clem.), increased in area and intensity in spruce-fir stands in Minnesota, where more than a million acres were noticeably defoliated. The insect was active in northern Wisconsin and the Upper Michigan Peninsula, but most stands in these two States are young and vigorous, so the total damage should be small.

The severity of infestations in Minnesota prompted public and private agencies to start programs for suppression in areas of high commercial and recreational value. Using aircraft, workers sprayed a 7,240-acre area east of International Falls, and about 400 acres in the vicinity of Caribou Lake. Plans for a stepup of suppression in 1960 include spraying some 20,000 acres of commercial timber and about 300 acres of recreational lands.

The jack-pine budworm, *Choristoneura pinus* Free., has been an important pest of jack pine and of understory white and red pine in the Lake States for the past 30 years. Defoliation in 1959 was much heavier in

#### Pandora Moth Outbreak Discovered in Wyoming and Colorado

The pandora moth, *Coloradia pandora* Blake, caused light to heavy defoliation of lodgepole pine on approximately 9,000 acres of the Medicine Bow and Routt National Forests near the Wyoming-Colorado boundary. Overwintering pupae, abundant in the soil will probably produce a heavy moth flight in the summer of 1960. Because the insect has a two-year life cycle, damage by the young larvae in 1960 is not expected to be severe.

several areas in Wisconsin, Michigan, and Minnesota, but infestations were not widespread. In the vicinity of Cass Lake, Minnesota, some 600 acres were sprayed to reduce epidemic populations and prevent severe stripping of affected trees. Sampling in the summer and fall showed only 500 acres in the Chippewa National Forest, Minnesota, requiring control in 1960.

#### Defoliation Severe in Tamarack Stands

The larch sawfly, *Pristiphora erichsonii* (Htg.), has been epidemic in the Lake States since 1949 and partial to complete defoliation has occurred each year throughout the 482,000 acres of tamarack type in northern Minnesota. Defoliation in 1959 was general on about 350,000 acres in the north-central and northeastern sections of the State, and some tree mortality occurred on both the better sites and the thin soil sites. Infestations also increased in severity in northern Wisconsin and Upper Michigan and tree mortality in these areas may be expected in 2 to 3 years. Parasites exerted only a minor degree of control on sawflies because the host encapsulates the egg of its principal parasite, *Mesoleius tenthredinis* Morley.

#### Pine Sawflies Defoliate Plantings and Commercial Stands

Several species of pine sawflies damaged natural pine stands and plantations throughout the Lake States and the Central States. Scattered infestations of the red-headed pine sawfly, *Neodiprion lecontei* (Fitch), occurred in Michigan, Missouri, and south and west-central Ohio on red, Scotch, shortleaf, and pitch pines. Small areas in the Upper Michigan National Forest and in the southern part of the State had to be sprayed. The Saratoga spittlebug, *Aphrophora saratogensis*

(Fitch), required control on about 500 acres in southern Michigan, so treatment for both species was performed in one operation.

The area of defoliation of red, Scotch, and Austrian pines by the European pine sawfly, *Neodiprion sertifer* (Geoff.), in Ohio and Indiana doubled in 1959, but most infestations were light to moderate. In the Mohican State Park, Ohio, a 40-acre plantation of 6-year-old Scotch pine was completely defoliated, but nearby plantations escaped injury apparently because they were sprayed with a virus during outbreaks in 1953 and 1955. Plots similarly treated in the Henderson State Park, Illinois, also remained relatively free of attack and the virus was still active in the small population left in 1959. The introduced pine sawfly, *Diprion similis* (Htg.), again stripped white pine in scattered areas throughout Crow Wing County in Minnesota. It also fed upon jack pine, which was unusual. Feeding by the white-pine sawfly, *N. pinetum* (Nort.), in Ohio was generally light and scattered, but there were instances of pine mortality from severe defoliation.

A spring defoliator of shortleaf pine, *Neodiprion taedae linearis* Ross, first reported in the Central States in 1956, is now dispersed over most of southeastern Missouri and southern Illinois. Populations declined in natural shortleaf stands in 1957 and almost disappeared in 1958. In 1959, however, the insect became more widespread in southeastern Missouri. This species also lives in the South, where in some years it has been an important defoliator of loblolly pine in southern Arkansas and northern Louisiana.

Small light infestations of the jack-pine sawfly, *N. americanus banksianae* Roh., Swaines jack-pine sawfly, *N. swainei* Midd., and the red-pine sawfly, *N. nanulus* Schedl, were reported in the Lake States.

#### Pine Weevils Destructive in Many Areas

The pine-root collar weevil, *Hylobius radicis* Buch., has become a serious pest of sapling-size jack and Scotch pines, and to a lesser extent red pine, in Wisconsin, Michigan, and Minnesota. Heaviest damage in 1959 was reported from northern Wisconsin, where complete girdling by weevil larvae killed many trees, and strong winds toppled others that were partially girdled.

The pales weevil, *Hylobius pales* (Hbst.), *Pissodes approximatus* Hopk., and *H. warreni* Wood, girdled seedlings in many Christmas

tree plantations in Wisconsin and Minnesota where broods developed in stumps left from cutting. If seedlings are planted within a year after the Christmas trees are harvested, conditions become ideal for weevils. Bark chewing on boles, leaders, and branches of Douglas-fir and pines up to 10 years old resulted in high mortality in some plantations. Stumps and slash should be removed to make conditions less attractive to the weevils and prevent development of damaging populations.

The white-pine weevil, *Pissodes strobi* (Peck) damaged leaders on pine and spruce in stands throughout the Lake States. Injury to red pine, particularly in northeastern Wisconsin, was common. Incidence of attack in red pine plantations increased, and Scotch and Austrian pine and Norway spruce were also attacked. Aerial and hand spraying of small infestations in many areas gave poor results. The reason for these failures was not apparent. In contrast, a small-scale test with lindane and aroclor, made by the Wisconsin Conservation Department, proved successful.

#### Shoot Moths and Tip Moths A Recurring Problem

Several species of shoot moths and tip moths caused severe damage to pine plantations in the Lake States and Central States (fig. 10). The European pine shoot moth, *Rhyacionia buoliana* (Schiff.), caused great



Figure 10. Repeated attacks by the European pine shoot moth make pines bushy and malformed.

damage to young red pine plantations, and more limited damage to Scotch pine plantations in Lower Michigan and in several localities in the Upper Peninsula and in Wisconsin.

The Zimmerman pine moth, *Dioryctria zimmerani* (Grote), continued to be an important pest of pines in Christmas tree plantings in Michigan, Wisconsin, and Indiana. It was also active in northeastern Illinois. Heaviest damage occurred near LaPorte, Indiana, where a 10-acre plantation of 8-year-old pines was so severely attacked that it had to be destroyed. Some plantation owners successfully reduced populations by spraying with DDT.

Twig killing of pines by the Nantucket pine moth, *R. frustrana* (Comst.), and a closely related species, *R. rigidana* (Fern.), has been noticeable for the past 18 months in the Northern Plains and in most of the Central States. In central Kentucky over 90 percent of the shoots in some plantations were infested. Examinations in plantations near Gambellsville, Kentucky, and Gledening Reservoir, Ohio, showed that at least 70 percent of the larvae were parasitized or diseased. Loblolly and shortleaf pines were more frequently infested than red, Scotch, pitch, or Virginia pines.

#### Saratoga Spittlebug Destructive in Wisconsin and Michigan

The Saratoga spittlebug, *Aphrophora saratogensis* (Fitch), one of the most serious pests of red pine and jack pine plantations in Wisconsin and Michigan, continued in several areas in 1959. Damage was especially severe in Wisconsin. Extremely hot, dry weather during the early summer in lower Michigan killed much of the population. Suppression during the year was undertaken on 4,100 acres.

The pine spittlebug, *A. parallela* (Say), also was reported from the Lake States. All pines are subject to attack by this insect, but damage during 1959 was most severe in areas planted to Scotch pine.

#### Pine Needle Miner Declines In Ohio

From 1954 to 1958, the pine needle miner, *Exoteleia pinifoliella* (Chamb.), caused severe browning of pitch pine foliage in Tuscarawas, Carroll, and Harrison Counties, Ohio. This year a reduced population did little or no damage in previously affected areas.

#### Turpentine Beetles Attack Seed Trees

The black turpentine beetle, *Dendroctonus terebrans* (Oliv.), was active in logging areas in the southern portion of the Cumberland National Forest, Kentucky. Residual seed trees were heavily damaged where scarification treatments were made by bulldozing to encourage pine regeneration. The beetle also attacked shortleaf pine at Eminence, Missouri, and in McCreary County, Kentucky, where trees were weakened by disease. Red pine in the Mohican State Forest, Ohio, suffered damage where cut material and stumps supported heavy beetle populations.

#### Mound Ants Kill Trees With Formic Acid

The Allegheny mound ant, *Formica exsectoides* Forel, killed young white pine in localized spots in Hardin, Holmes, and Coshocton Counties, Ohio. In these areas, there were as many as 10 mounds per acre and 3 to 10 year-old pines were killed in groups of 5 to 20. The ants destroy all vegetation around each mound for a distance of 20 feet or more by injecting formic acid into the tissues of the main stem. The ants are not vegetarians, and apparently kill trees to eliminate shade.

#### Hardwood Defoliators Abundant in Some Localities

Localized infestations of the gypsy moth, *Porthetria dispar* (L.), were again found in Michigan; 20,000 acres at three different locations were sprayed in a continuing eradication program. A followup failed to trap any moths in the treated areas, but moths were trapped at locations west and southwest of Lansing. An estimated 10,000 acres will be treated in 1960.

Large populations of forest tent caterpillar, *Malacosoma äsustria* Hbn., dwindled to almost nothing in Minnesota and northwestern Wisconsin; adverse weather and parasitism were probably responsible. Larvae, hatching 10-14 days before the opening of the aspen buds, were hit by cold rains and high winds that helped destroy the starving caterpillars. The eastern tent caterpillar, *M. americanum* (F.), caused moderate to complete defoliation of black cherry, hawthorn, oak, willow, and cottonwood in eastern Ohio. Reports indicate that the insect is increasing and spreading westward. Tents of the fall webworm, *Hyphantria cunea* (Drury), were common on deciduous trees in Ohio, but feeding was

generally light except in Lake County where willow was severely attacked. Defoliation by the mimosa webworm, *Homadaula albizziae* Clarke, was moderate to complete on honeylocust throughout southern Indiana, central and southern Kentucky, and southwestern Ohio. The locust leaf miner, *Chalepus dorsalis* Thunb., damaged black locust in eastern Kentucky and in localized areas in southern Ohio and Decatur and Rush Counties, Indiana.

The walking stick, *Diaperhomeria femorata* (Say), defoliated oaks in Minnesota and Wisconsin and black locust and elm in Muskingum County and adjacent counties in Ohio. DDT spray was applied by aircraft to 350 acres on the Menominee Indian Reservation, Wisconsin, to suppress populations and prevent further weakening of the stands.

#### Locust Borer and Elm Bark Beetle Destructive

The locust borer, *Megacyllene robiniae* (Forst.) remained important throughout the Central States. It is especially harmful in strip-mining areas where black locust has been planted to reclaim land and stop erosion. Populations of the smaller European elm bark beetle, *Scolytus multistriatus* (Marsh.) were high in the Central States. This beetle carries the dreaded Dutch elm disease and wilting elms were a common sight in many woodlots in central and northeastern Ohio where the disease had been carried.

### South and Southeast

#### Highlights

1. A severe outbreak of southern pine beetle developed in the Big Thicket area of east Texas in the summer and fall. Infestations also increased in parts of North and South Carolina.

2. The black turpentine beetle was destructive in many logging areas in the Gulf States; however, infestations were less severe in the Southeast than for the past several years.

3. The balsam woolly aphid continued in outbreak in stands of Fraser fir in North Carolina, killing many trees in high-value recreational areas at Mt. Mitchell.

4. Spider mites developed to epidemic numbers on an estimated 10 million acres

#### Hemlock and Poplar Borers Important Pests in Lake States

The hemlock borer, *Melanophila fulvoguttata* (Harr.), and the poplar borer, *Saperda calcarata* Say, caused damage in the Lake States in past years, and infestations were again reported from several areas in 1959. Several other borers, such as *Dicerca tenebrica* (Kby.), *Agrilus liragus* (B. & B.), and the gall-forming twig borer, *Saperda concolor* Lec., were common in stands of aspen in Michigan, Wisconsin and Minnesota. The bronze birch borer, *Agrilus anxius* Gory, and the bronze poplar borer, *A. liragus* (B. & B.), also were reported in the Lake States, particularly in stands weakened by heavy cutting, windthrow, and successive heavy defoliation. The sugar-maple borer, *Glycobius speciosus* (Say), occurred in localized areas and attacked smaller trees and the branches of larger ones.

#### Scales and Aphids Not Abundant

The pine tortoise scale, *Toumeyella numismaticum* (P.&M.) develops epidemics on jack pine and Scotch pine in the Lake States, but it was not abundant during 1959. Although infestations occurred at several locations, populations were held in check by natural controls. The woolly pine aphid, *Pineus pinifoliae* (Fitch) killed and damaged some trees on the Superior National Forest, but was not widespread. The eastern spruce gall aphid, *Chermes abietis* L., caused light damage to white spruce and Norway spruce in Christmas tree plantations in local areas.

of pine forests in northern Louisiana and southern Arkansas.

5. The scope of elm spanworm infestations increased in the mountains of Georgia, Tennessee, and North Carolina, but the intensity of defoliation dropped from that of prior years.

6. The Virginia pine sawfly not only intensified defoliation activity in central Virginia and northeastern North Carolina, but spread southward.

#### Southern Pine Beetle Again Threatens Stands in East Texas

During early summer, an outbreak of the southern pine beetle, *Dendroctonus frontalis* Zimm., developed rapidly in the Big Thicket

of southeast Texas. The outbreak area, extending over 70,000 acres in Hardin and Liberty Counties, contained some 117 spot infestations with as many as 100 trees per spot. Suppression was promptly begun in the affected areas, but late summer and fall rains brought efforts to a halt as much of the country became inaccessible. As a result, 14 spots were uncontrolled at the year's end and beetles began to spread to scattered single trees over large areas. From these overwintering brood trees, new spot infestations will likely develop and even more serious problems will probably arise in 1960.

During the fall, the southern pine beetle was more active in Tyrrell, Hyde, and Dare Counties, North Carolina, where about 500 infested loblolly and pond pines were discovered in 40 spots. Most of the area contained jungle-like growth of low economic value, but control measures were started in high-value stands that were accessible.

Small spot infestations also appeared and spread on the Talladega National Forest, Alabama, on industrial lands in east-central Alabama, and on and near the Sumter National Forest in South Carolina. In the latter area, two-thirds of the infested trees were green, indicating optimum conditions for rapid brood development. Although control action was quickly started to prevent spread, continued beetle activity may be expected in 1960.

#### Ips Beetles Less Abundant Than Usual

The three species of *Ips* engraver beetles, *Ips avulsus* Eichh., *I. grandicollis* Eichh., and *I. calligraphus* Germ., often quite destructive in the pine-producing areas of the Southern and Southeastern States were less abundant in 1959 than for the past several years. Seasonal uptrends occurred in most of the States, but there were no serious outbreaks. Small groups of pines often were killed in the vicinity of trees struck by lightning, and moderate concentrations of single infested trees were observed in stands weakened by flooding and crowding.

In several areas, *Ips avulsus* Eichh. developed in logging slash and later spread to standing timber. These spot infestations were mostly localized, and not serious. Pines along the South Carolina coast were uprooted and broken by high winds in the early fall and unless the damaged material is salvaged, a buildup of *Ips* and other bark beetles will develop and attack undamaged timber.

#### Black Turpentine Beetle--A Major Pest

The black turpentine beetle, *Dendroctonus terebrans* Oliv., once considered of little economic importance in the South and Southeast, has become a serious forest pest, capable of killing the best trees in the forest. It has been especially prevalent in recent years in stands weakened by flooding and other disturbances.

During 1959 this beetle was a continuing problem on most of the national forests and on many State and private lands in the Gulf States. It was most active in flatwoods forests, along creek bottoms, and on low, poorly drained sites. Mechanized logging on wet soils resulted in excessive injury to tree roots. This damage, plus prolonged early summer flooding, created favorable conditions for beetle development. Prompt suppression prevented excessive timber mortality in most areas.

The black turpentine beetle was not a serious pest in the Southeastern States this year. Some damage was reported from various localities, but heavy populations were only found on the Chattahoochee National Forest in Georgia. Beetle attacks were associated with recent logging and lightning-damaged trees. There was no activity in adjoining green timber.

#### Infestation Of Little-Known Sawfly Required Suppressive Action

In September and October 1958, a little-known sawfly, *Neodiprion excitans* Roh., stripped foliage from loblolly and shortleaf pines on industrial lands in southeast Texas. Severely defoliated stands were well defined from the air and totaled about 25,000 acres. In early November, the larvae spun cocoons on and in the litter near tree bases, and occasionally in bark crevices.

During the winter, parasitic insects became unusually active and killed many of the developing sawflies in the cocoons. Hogs, armadillos, mice, and shrews destroyed many more and by early March an estimated 95 percent of the sawfly population had been wiped out. The few prepupae that survived, however, transformed to adults, and one or more additional broods developed during the late spring and early summer. By July 1, previously defoliated stands were again threatened. Aerial spraying with DDT was recommended to prevent tree mortality and further growth loss, and to discourage a possible increase of the southern pine beetle in the weakened

stands. Approximately 19,000 acres of the more heavily infested timber were sprayed in late July and early August. A larval disease, as yet undetermined, spread rapidly through the treated and untreated areas when the project was near completion. The dual action of the chemical and the disease, and the continued activity of parasites within surviving cocoons, reduced the sawfly to an endemic level.

This sawfly has also been a problem in the pine stands in north Florida during the past 3 years, defoliating valuable loblolly pine on some 300,000 acres. Weather, predators, and insect parasites caused a decline in the infestation during 1959 and natural enemies should continue to exert a controlling influence in 1960.

#### Red-Headed Pine Sawfly Damages Mid-South Plantings

The red-headed pine sawfly, *Neodiprion lecontei* (Fitch), was prevalent on young pines of all species in Louisiana and Texas. Isolated infestations were reported from Oklahoma, Arkansas, Alabama, and Mississippi. Repeated defoliation in some plantations killed enough trees so that spraying was done to prevent further damage. A severe outbreak in stands of loblolly and shortleaf pines on the Kisatchie National Forest, Louisiana, required aerial and ground spraying in June. The insecticide, together with heavy egg parasitism by a chalcid wasp, *Closterocerus cinctipennis* Ashm., appeared to have controlled the insect.

#### Virginia Pine Sawfly Spreads Southward

An epidemic of the Virginia pine sawfly, *Neodiprion pratti pratti* (Dyar), which has been present in Maryland and Virginia since 1954, spread southward into North Carolina. In the northern areas, Virginia and pitch pines are the primary hosts; farther south, shortleaf pine is favored. A marked increase in feeding intensity occurred during May in central Virginia and northeastern North Carolina, and throughout the pine type in the Coastal Plain and Piedmont of Virginia (fig. 11). Pine stands are more extensive in this relatively new zone of infestation. This greater abundance of suitable host material favors sawfly increase and spread.

#### Balsam Woolly Aphid Damages Recreational Areas

Fraser fir killed by the balsam woolly aphid, *Chermes piceae* (Ratz.), was of particular concern in the important scenic, recreational, and watershed areas around

Mount Mitchell in western North Carolina. There, an estimated 21,600 trees were killed during 1959. Heavy bole infestations occurred on almost all of the firs throughout the 7,100 acre spruce-fir type, and additional heavy killing of trees is expected in 1960. Attempts to suppress aphid populations by oil sprays and by systemic insecticides were not very successful. To gain control as rapidly as possible, major effort was made to introduce two important predators, *Aphidoletes thompsoni* Möhn and *Laricobius erichsonii* Rosenh., from foreign countries. Successful establishment has not yet been demonstrated.

#### Pine Leaf Chafers--A Future Problem?

During the spring the pine leaf chafer, *Pachystethus obliqua* (Horn), caused needle browning on 5,000 acres of two- to four-year-old loblolly pine in plantings in southeastern North Carolina. Beetles were active on almost every tree in the area in early June, but feeding subsided by July. Feeding was confined almost entirely to new growth, and injury consisted of a notch cut in each needle just above the bundle sheath. The needles bent down at this point and died, giving the trees a brownish appearance. Affected trees usually make a rapid recovery. However, growth reduction resulting from continued feeding could lessen the seedlings' ability to compete with hardwood undergrowth. The worst effects from the pest, therefore, may not be felt until future years.

#### Mite Infestations Occur On 10 Million Acres Of Pines

In early May, spider mites, *Oligonychus milleri* (McG.), infested about 10 million acres of loblolly and shortleaf pines in northern Louisiana and southern Arkansas. The conspicuous browning of the foliage of pines of all sizes caused alarm among foresters and timber owners, who feared that the trees would die. Young, open-grown or under-stocked even-aged stands were hardest hit, but both large and small trees were infested in some areas. Heavy rains in late May and early June eased the situation by knocking the mites off the needles. Trees in the affected areas made a good recovery. Similar short-lived outbreaks of spider mites on pine were observed in east Texas in 1954 and central Mississippi in 1955.





Figure 11. Larvae of the Virginia pine sawfly feed gregariously and defoliate many species of southern pines. Photo courtesy North Carolina Forest Service.

#### Other Pine Insects Important Pests

The Nantucket pine moth, *Rhyacionia frustrana* (Comst.), is the most common and widespread insect attacking young loblolly and shortleaf pine plantations in the South and Southeast. The insect became more important in 1959 because of the expanding planting program in the region.

The Texas leaf-cutting ant, *Atta texana* Buckley, caused mortality to naturally established and planted pine seedlings in west-central Louisiana and East Texas. Methyl bromide was used to fumigate destructive colonies.

The white-pine weevil, *Pissodes strobi* (Peck), caused moderate damage to plantations in local areas in the Southeast. The pine

spittlebug, *Aphrophora parallela* (Say), was plentiful in many other areas. Browning of Virginia and pitch pine foliage by the pine needle miner, *Exoteleia pinifoliella* (Chamb.), was common along most of the ridgetops from Hot Springs to Staunton, Virginia, and the pine leaf aphid, *Pineus pinifoliae* (Fitch), which alternates between red spruce and white pine, produced the heaviest galling of red spruce since 1951.

#### Hardwood Borers Cause Serious Lumber Degrade

Hardwood insects kill far fewer trees than do pine insects, but wood borers cause tremendous losses in value in living trees. External symptoms of infestation are indistinct or absent and the damage often goes unnoticed until timber is cut or logs are sawed (fig. 12). The more important wood borers causing damage and degrade of lumber in 1959 are the roundheaded and flatheaded borers and the carpenter moths.

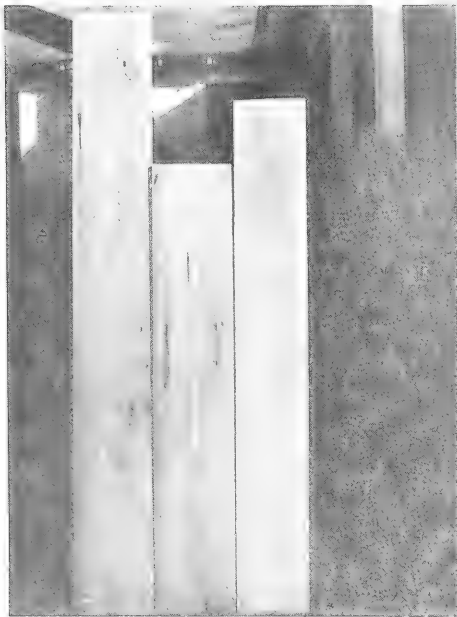


Figure 12. Defects caused by wood borers (left and center) reduce value of boards cut from oaks in Southern States.

#### Caterpillars Strip Southern Hardwoods

During the spring of 1959 the forest tent caterpillar, *Malacosoma dissitria* Hbn., stripped

large areas of bottom-land hardwoods in southern Louisiana and Alabama and parts of Mississippi. Hardwoods suffered severe damage along the West Virginia-Virginia State line. In Louisiana, feeding was lighter in the 40,000-acre area infested last year, although defoliation of tupelo and blackgum was intense west of New Orleans. Caterpillars spun their cocoons in early May and moths were in flight 2 weeks later. By June, trees had refoliated but leaves were smaller and less abundant than normal. Sweetgum, river birch, willow oak, and overcup oak on 150,000 acres along the Alabama River bottom were heavily defoliated. Many sweetgums as far north as Jackson, Alabama, were completely stripped. Infestations also were seen in Clarke and Washington Counties, Alabama, and Wayne County, Mississippi.

Many of the caterpillars in all areas were infested with a fungus, and parasitized by tachinid and sarcophagid flies, *Achaetoneura* sp. and *Sarcophaga houghi* Ald., respectively.

The elm spanworm, *Ennomos subsignarius* (Hbn.), has been an important defoliator of oaks, hickories, and other hardwoods in the mountains of Georgia, Tennessee, and North Carolina for the past few years. Infestations, first discovered in northern Georgia in 1954, spread over an area of 860,000 acres in these States. Although the outbreak increased by about 290,000 acres since 1958, the intensity of defoliation was markedly lower. There were no areas of heavy feeding in 1959, in contrast to about 31,000 acres of heavy to complete defoliation last year. Results of egg mass surveys and studies of natural enemies indicate that defoliation will continue to decline, especially in the western part of the outbreak area. The adverse effects of repeated defoliation on tree growth and vigor, however, may continue for many years. In northern Georgia, where successive attacks have occurred for 5 years, many oaks and hickories have died.

Moderate to complete defoliation of various species of oak was reported in many areas during September and October. The orange-striped oak worm, *Anisota senatoria* (J. E. Smith), the yellow-necked caterpillar *Datana ministra* (Drury), and the variable oak leaf caterpillar, *Heterocampa mantee* (Dbdy.), were the insects most often responsible. Defoliation occurred on thousands of acres of oaks in Jasper and Newton Counties, Texas, and in southwestern Louisiana and northeast Mississippi.

## Northeast

### Highlights

1. The spruce budworm caused medium to heavy defoliation of balsam fir stands on approximately 105,000 acres in Maine, and light populations were found in some of the area sprayed for control in 1958.

2. The balsam woolly aphid continued as a major pest of balsam fir in Vermont, New Hampshire, New York, and Maine.

3. The white-pine weevil and the European pine shoot moth were destructive to many pine plantations in all of the North-eastern States.

### Spruce Budworm Infestations Increase In Maine

The scope and severity of infestations of the spruce budworm, *Choristoneura fumiferana* (Clem.), increased in Maine, with 250,000 acres of continuous defoliation in south-eastern Aroostook County. Light populations were found in parts of the area sprayed for control in 1958. Noticeable feeding in the State covered 940,000 acres. Areas of medium to heavy defoliation totaled 105,000 acres. The largest part of this, about 90,000 acres, occurred in a band west of Highway Route 11 and Portage Lake. The western boundary of the infestation remained almost stationary for the past several years. Spread has been eastward with the prevailing winds. Damage will probably be more serious in 1960. The worst infestations will be sprayed.

### Balsam Woolly Aphid Destructive

The balsam woolly aphid, *Chermes piceae* (Ratz.), is one of the most destructive forest insects in the Northeast. On the Green Mountain National Forest in Vermont, for example, some 20 percent of the merchantable volume of balsam fir has been killed by the aphid since 1951. Approximately 75 percent of the timber stands were heavily infested in 1959. Conditions in New Hampshire, New York, and Maine are comparable to those described for Vermont.

In an attempt to control the aphid by biological means, effort was increased during the year to introduce and establish insect predators from abroad. Some 1,100 adults of the fly predator, *Aphidoletes thompsoni* Mõhn, and 15,330 adults of the predaceous beetle,

*Laricobius erichsonii* Rosenh., were introduced and liberated on the Penobscot Experimental Forest in Maine.

### White Pine Weevil Deterrent To Pine Production

Numerous reports of the white-pine weevil, *Pissodes strobi* (Peck), some of which indicated increased damage, showed that this insect was still the most serious deterrent to the production of white pine in the Northeast. Weevils were more abundant in New Hampshire, and heavily damaged young plantations throughout New York. In Forest County, Pennsylvania, much Austrian pine was attacked, but nearby white and Scotch pines were only lightly affected.

Control efforts against the weevil were stepped up during the year; various materials and methods were tested. Field tests of airplane and helicopter applications of DDT and other toxicants gave inconsistent results, ranging from excellent control to poor.

### Virginia Pine Sawfly Widespread

The Virginia pine sawfly, *Neodiprion pratti* (Dyar), has been epidemic in Maryland and small areas in northern Virginia since 1954. In Maryland, where some of the oldest infestations occur, defoliation intensity increased slightly. Sawflies are present in most pine stands, and damage persists along the Patuxent River drainage, where part of the initial outbreak was discovered. Some mixed Virginia and pitch pine stands have withstood 5 years of attack and no extensive stand mortality has been directly attributed to sawfly feeding.

### Other Sawflies Defoliate

The European pine sawfly, *Neodiprion sertifer* (Geoff.) continued to severely defoliate red and Scotch pines in southern New York, Connecticut, northern New Jersey, and northeastern Pennsylvania. The red-headed pine sawfly, *N. lecontei* (Fitch), again was abundant on young pines in New York.

Early summer and fall feeding by the sawfly, *Neodiprion pini-rigidiae* (Nort.), was common on pitch pine in southern New Jersey, with complete defoliation in scattered localities.

## Plantations Damaged By Many Insects

The European pine shoot moth, *Rhyacionia buoliana* (Schiff.), continued to damage valuable plantings of red and Scotch pines in the western two-thirds of the Northeastern States. Another shoot moth, *Eucosma gloriola* Hein., caused substantial twig killing of red, Scotch, white, and Austrian pines in several counties in Pennsylvania. The Nantucket pine moth, *R. frustrana* (Comst.), severely attacked many young loblolly pine plantations along the eastern shore of Maryland. Scattered infestations were reported elsewhere in the eastern part of the State.

The pine engraver, *Ips pini* (Say), continued its depredations throughout the Northeast. Increasing populations were found in western New York. If rainfall deficiencies continue, more serious trouble may develop.

The balsam gall midge, *Dasyneura balsamicola* (Lint.), troubled Christmas tree growers in Vermont, and the pales weevil, *Hyllobius pales* (Hbst.), severely damaged Scotch and white pine Christmas tree plantings in Pennsylvania and New York. Heavy attacks by the pine root-collar weevil, *H. radialis* Buch., occurred in red and Scotch pine plantations in Warren, Saratoga, and Lewis Counties, New York, and almost wiped out a Scotch pine Christmas tree plantation at Shelton, Connecticut. Conspicuous browning of pitch pine and Virginia pine resulted from feeding by the pine needle miner, *Exoteleia pinifoliella* (Chamb.), in Kent and Newcastle Counties, Delaware; southern New Jersey; and, the Myles Standish State Park, Massachusetts. The eastern spruce gall aphid, *Chermes abietis* L., was active in New York, Pennsylvania, Maryland, and Maine. The Cooley spruce gall aphid, *C. cooleyi* Gill., was abundant on introduced Colorado blue spruce, Engelmann spruce, and Douglas-fir throughout New York; 50 percent of the spruce twigs were distorted in some areas.

### Gypsy Moth a Continuing Problem<sup>1</sup>

Winter and spring weather of 1959 favored development of the gypsy moth, *Porthetria dispar* (L.). Some winterkill of eggs above snowline occurred in certain spots in northern Vermont, but there were no reports of larval kill by late spring frost. Observations on egg hatch, larval development, and

subsequent feeding indicated a buildup of populations in scattered centers throughout the infestation area in New England and eastern New York (fig. 13).



Figure 13. Eggs, larvae, pupae, and adults of the gypsy moth on a bark section of oak.

Aerial surveys showed 14,467 acres of defoliation, distributed as follows: Maine, 1,000; New Hampshire, 4,000; Vermont, 1,500; Massachusetts, 382; Connecticut, 5,980; and New York in the Upper Hudson and Champlain Valley areas, 1,605.

The program designed to eliminate the gypsy moth from its western boundaries was continued in peripheral areas of infestation in New York. Some 80,000 acres in southeastern Otsego and northeastern Delaware Counties were sprayed with Sevin-paraffin-oil suspension. This control program was undertaken cooperatively by the State Department of Agriculture and Markets, the State Conservation Department, the State College of Agriculture, and the Plant Pest Control Division, U.S. Department of Agriculture.

### Tent Caterpillars In Outbreak Status

Defoliation of maple, aspen, oak, and other hardwoods by the forest tent caterpillar, *Malacosoma disstria* Hbn., was more conspicuous and widespread than in 1958, especially in Pennsylvania, Maryland, and

<sup>1</sup>Information from Plant Pest Control Division, Agricultural Research Service.

West Virginia. The prevalence of current overwintering egg masses indicates serious defoliation in early 1960 unless weather, parasites, and diseases intervene. The caterpillars will kill trees in the more southerly portions if rainfall deficiencies continue, especially on ridges where weakened trees succumb first.

The eastern tent caterpillar, *M. americanum* (F.), attained the largest numbers in recent years and stripped leaves from the wild cherry and fruit orchard trees in Delaware, Maryland, Rhode Island, and New York State.

#### Miscellaneous Hardwood Insects Destructive

Record populations of the birch leaf miner, *Fenusa pusilla* (Lep.), occurred in New York, resulting in complete defoliation in some areas. Infestations also occurred in

Vermont, Massachusetts, and New Jersey. Approximately 3,000 acres of aspen in Essex County, New York, were defoliated by the large aspen tortrix, *Archips conflictana* (Wlkr.), in combination with the fruit tree leaf roller, *A. argyrospila* (Wlkr.). The solitary oak leaf miner, *Cameraria hamadryadella* (Glem.), sometimes in association with the gregarious oak leaf miner, *C. cincinnatiella* (Chamb.), was responsible for blotching and leaf shedding of white oak in Massachusetts, Rhode Island, and Orange County, New York. The satin moth, *Stilpnotia salicis* (L.), again stripped lombardy poplar in scattered parts of New York State.

There was a general outbreak of the beech scale, *Cryptococcus fagi* (Baer.), along the Hudson River Valley with a heavy localized infestation near Warrensburg, New York. The scale was also reported abundant in New Hampshire. The presence of the *Nectria* fungus of beech, often associated with the insect, was not indicated.

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**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

FALL ARMYWORM continues a problem in Tennessee and Oklahoma in small grains, alfalfa and pastures. EUROPEAN CORN BORER fall survey indicates record populations present in Grand Forks and Traill Counties, North Dakota. SORGHUM MIDGE populations light to heavy in most milo in Tulare County, California. (p. 1035). Surveys for a RICE DELPHACID (*Sogatia orizicola*) were negative during 1960 crop season in Southern States. (p. 1036). THREE-CORNERED ALFALFA HOPPER damaging to alfalfa in Lee County, Alabama; counts 4-7 adults per 10 sweeps in Chaves County, New Mexico; and medium to heavy in south central and southeast Oklahoma. (p. 1037).

Citrus INSECT situation in Florida. CITRUS BLACKFLY surveys in Texas during 1960 season negative. (p. 1038).

BARK BEETLES damaging to conifers in areas of California and larvae of a PHYCITID (*Dioryctria abietella*) are very abundant in northern California and infesting trees other than their normal hosts. (pp. 1039, 1040). FALL WEBWORM continues damaging in Texas and New Mexico. (p. 1040).

Several FLIES continue to be of concern on cattle in Oklahoma. (p. 1043). Current SCREW-WORM situation report. (p. 1044).

INSECT DETECTION: An eriophyid mite (*Aculus teucii*) recorded for first time in North America at Painesville, Ohio. (p. 1041). New state records reported were white-fringed beetles in Virginia (p. 1035), smaller European elm bark beetle in Oregon and a pine sawfly (*Neodiprion excitans*) in Illinois (p. 1040); and face fly in Kansas (p. 1041). New county records reported were white-fringed beetles in Halifax County, North Carolina, Benton County, Tennessee, and Webster County, Georgia (p. 1035); western corn rootworm in Humboldt and Adair Counties, Iowa (p. 1036); a sphingid (*Pseudosphinx tetrio*) in Sarasota County, Florida (p. 1041); a coccid (*Pseudococcus microcirculus*) in Los Angeles County, California (p. 1041); and giant hornet in Union and Hart Counties, Georgia (p. 1045).

INSECTS not known to occur in the United States. (p. 1047).

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Reports in this issue are for week ending October 21, unless otherwise indicated

WEATHER OF THE WEEK ENDING OCTOBER 24

East of the Rocky Mountains and in Arizona and New Mexico, the week was generally colder than normal by 3° to 6°, and was several degrees colder than the previous week. Cold air from western Canada moved over the midcontinent area on Tuesday and Wednesday and the Eastern States on Thursday. Freezing or frost occurred as far south as the Texas Panhandle and northern portions of Oklahoma, Arkansas, Mississippi, and Georgia. A low of 11° at Huron, South Dakota, on the 19th was the lowest ever recorded there so early in the season. On the 20th, lows in the 20's were recorded in northeastern Kansas, and Carroll, Iowa, reported 9°. The first freeze of the season occurred in much of the southern Appalachian region on the 21st, with a low of 30° at Blairsville, Georgia. In the upper Rockies, the Great Basin, and the Pacific States, the week was a few degrees warmer than normal and much warmer than the previous week, as much as 10° in the Pacific Northwest.

Precipitation fell on 2 days in Arizona, New Mexico, and from the Great Plains to the Atlantic coast during the first half of the week. Totals were extremely light in the North Central Interior, but exceeded an inch in most southern areas and in the Atlantic Coastal States. In Texas weekly totals of 4 to 8 inches in the south central portion and 7 to 10 inches in the Coastal Bend area caused flooding along many streams. Beneficial rains exceeding an inch fell in sections of western Kansas on the 19th. Snow flurries occurred in many northern sections for the first time this season, and the first measurable amounts were reported in northern Michigan, with 2 inches at Marquette and 1 inch at Alpena and Grayling. Five consecutive weeks of below-normal precipitation in Minnesota have created a high fire hazard in some areas, and a fire in the Ft. Ripley area burned about 13,000 acres of brush and timberland on the 22nd. Precipitation was very light in the northern Rockies and Pacific States, except in western Washington where weekly totals of 1 to over 2 inches were measured. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - TENNESSEE - Widespread infestations continue in newly seeded alfalfa, small grain and pastures in central area. Controls applied to several thousand acres by ground and aerial equipment. (Mullett). OKLAHOMA - Medium to heavy infestations damaging alfalfa and small grains in scattered fields over major portions of State. Heaviest infestations apparently along southern border where counts ranged 3-6 per linear foot of row in wheat, up to 20 per square foot in a field of volunteer millet and 2-8 per sweep in alfalfa. (Okla. Coop. Sur.). TEXAS - Cooler weather tended to reduce severe infestations in many areas of State. (Texas Coop. Rpt.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - NORTH DAKOTA - Survey completed in Grand Forks and Traill Counties (District I). Average infestation 89 percent, with 269 borers per 100 plants. This is a record infestation for this district. (N. D. Ins. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Percent lodging to corn, based on recent survey, is reported by districts as follows: North central - 4.3, northeast 4.4, east central - 10.1, southeast - 5.8. In extreme cases of very late corn, 30 percent or more of stalks lodged. Late corn represents only a small percent of total crop. Very light infestations of both Z. grandiosella and Pyrausta nubilalis present in early planted corn. In many cases, early planted corn showed that stalks had been infested early by both species, but few or no overwintering larvae are present, indicating an infestation by first generation with later generation moving on to late corn or other hosts. (Ark. Ins. Sur.).

CORN EARWORM (Heliothis zea) - DELAWARE - Larvae present in alfalfa throughout State, but decreased. Highest counts 1.7 per 10 sweeps in New Castle County. (Burbutis, Mason). NEBRASKA - Larvae remain active in ears of corn in Cuming County. (Bergman).

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Light to heavy populations in most milo fields in Tulare County. Percent of damage not assessed as yet. Johnson grass, common on ditch banks and margins of fields, is also infested. (Cal. Coop. Rpt.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Medium to heavy, widespread infestations damaging late grain sorghum in southern half of State. (Texas Coop. Rpt.).

A SOD WEBWORM (Crambus sp.) - OREGON - Killing orchardgrass on an Oregon State College experimental farm; controls necessary. (Rampton).

WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - Found in Greenville County on a "center strip" between U. S. Route 301 and the Atlantic Coast Line Railroad, October 12, 1960. This is first record in the State. Det. by R. E. Warner as G. leucoloma imitator, October 20. Less than 12 adults found and all within a few yards of and at the North Carolina line. Delimiting surveys found 2 adults on side of a farm road leading from Route 301 east across the railroad, about 25 yards from the railroad. Scouting of the farm and surrounding adjoining lands was negative. Further survey is being continued and eradication treatments will be applied as soon as possible. (Willey, October 24). NORTH CAROLINA - Survey in Trenton revealed one more infestation and new infestation found in south Jones County. About 50 acres found infested, but delimiting not complete. (Branan). Thirty-five additional acres found infested in Stanly County. Intensity of infestation considered light. (Johnson). Found for first time in Halifax County during September. (PPC, So. Reg; Sept. Rpt.). More infested acreage added in Halifax County. (Whitmer). TENNESSEE - Found for first time in Benton County. GEORGIA - Found for first time in Webster County. (PPC, So. Reg; Sept. Rpt.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - IOWA - Collected in Humboldt County on September 13 and in Adair County on October 14. These are new county records. (Gunderson).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEBRASKA - Adults active in corn in Cuming County. (Bergman).

RICE STINK BUG (Oebalus pugnax) - ALABAMA - Moderate to heavy infestations on grasses, grain sorghum and soybeans in Mobile County. (Seibels, Lockhart).

A RICE DELPHACID (Sogata orizicola) - Surveys made throughout Southern PPC Region during past season, with negative results. Most intensive survey, however, conducted in area where hoja blanca disease or its vector, S. orizicola, was found previously. (PPC, So. Reg.; Sept. Rpt.).

APHIDS - VIRGINIA - Extremely abundant on small grains, especially oats, at farm near Blacksburg, Montgomery County. (Roane, Oct. 14). OKLAHOMA - Aphids, probably Rhopalosiphum splendens or R. subterraneum, causing limited damage to few fields of fall-seeded wheat in Okfuskee County. Infestations killed several spots 1-3 square yards in area in some fields. (Okla. Coop. Sur.). WYOMING - R. splendens damaging grain in greenhouses at University of Wyoming, Albany County. (Fullerton). ARIZONA - Infestations of Hysteroneura setariae continue heavy in central area sorghum; however, flights of winged forms very light on October 22. (Ariz. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Small numbers noted in small grain (particularly barley) in widely scattered areas of State. (Okla. Coop. Sur.).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Extensive survey in fields of small grains in north central area negative. (Okla. Coop. Sur.).

GRASSHOPPERS - NEVADA - Melanoplus bilituratus and M. femur-rubrum averaged 5-25 per square yard in drier alfalfa and grain stubble fields east of Minden-Gardnerville, Douglas County. Most females no longer gravid and males predominate. (Bechtel). UTAH - Grasshoppers, predominantly M. bilituratus, still average 6 per square yard in many Logan Canyon and nearby foothill areas in Cache County. (Thornley, Knowlton). OKLAHOMA - Several species of grasshoppers damaging fields of alfalfa and small grains in localized areas in many sections of State. (Okla. Coop. Sur.). NORTH DAKOTA - Fall grasshopper egg survey completed on October 20. Data generally support that recorded during fall adult survey. However, egg survey data in a few areas increased population level from moderate to abundant. Observations showed egg development in coagulated stage. Several M. bivittatus egg pods recovered near York, Benson County, showed development in eye-spot stage. (N. D. Ins. Sur.).

FIELD CRICKETS - ALABAMA - Heavy infestations on pasture crops in Chambers, Lee and Tallapoosa Counties. (Barwood). MONTANA - Acheta sp. numerous in portions of Yellowstone, Fergus and Phillips Counties in early September. Newly planted wheat in Acton-Comanche area of Yellowstone County suffered marginal damage. Damage in northern area very light and confined to range grasses. (PPC. West. Reg.; Sept. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Occasional specimens found in greener fields, but averaged 0-12 per stem in drier fields in Douglas County. (Bechtel). UTAH - Populations increased somewhat in southern area. (Knowlton). ARIZONA - Infestations leveled off and are light to medium in central area. (Ariz. Coop. Sur.). NEW MEXICO - Infestations generally light in Mesilla Valley alfalfa, with moderate infestations in Chaves County. (N. M. Coop. Rpt.). OKLAHOMA - Light, but apparently showing slight decline in alfalfa in south central area. Continued to cause some concern, particularly in fall-seeded fields, in central and north central areas. Counts ranged 2-8 per sweep in south central area and 0-2 in southeast area. (Okla. Coop. Sur.).



PEA APHID (Macrosiphum pisi) - NEVADA - Averaged 0-5 per sweep in alfalfa in Douglas County. (Bechtel). IDAHO - Populations general in southwestern area alfalfa; some fields entering winter in Canyon County with populations in excess of 1,000 per sweep. (Waters). UTAH - Moderately numerous in Logan fields. (Knowlton). NEW MEXICO - Infestations generally light in Mesilla Valley alfalfa, with moderate infestations in Chaves County. (N. M. Coop. Rpt.). DELAWARE - Counts per sweep on alfalfa averaged 4.5 in Sussex County, 3.5 in Kent County and 8.5 in New Castle County. (Burbutis, Mason).

SOUTHERN GREEN STINK BUG (Nezara viridula) - LOUISIANA - Heavy infestation causing considerable damage to soybeans, locally, in St. John the Baptist Parish. (Spink). ALABAMA - This species along with Leptoglossus phyllopus and Euschistus servus fairly common on grasses, grain sorghum and soybeans in Mobile County. (Seibels, Lockhart).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - NEW MEXICO - Averaged 4-7 adults per 10 sweeps in alfalfa in Chaves County. (N. M. Coop. Rpt.). OKLAHOMA - Medium to heavy, up to 6 per sweep, continued in alfalfa in south central and southeast areas. (Okla. Coop. Sur.). ALABAMA - Damage to alfalfa quite evident in Lee County. (Guyton).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Continued to infest alfalfa in south central and southeast areas; counts ranged 0.5-4 per sweep in fields surveyed. (Okla. Coop. Sur.). DELAWARE - Adults and nymphs common in alfalfa; highest populations in Kent County, with average of 1 per sweep. (Burbutis, Mason). ALABAMA - Plentiful in alfalfa in Lee County. (Guyton).

ALFALFA WEEVIL (Hypera postica) - ALABAMA - Adults scarce in alfalfa in Lee County. (Guyton). DELAWARE - Adults present in all counties. (Burbutis, Mason).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults numerous in alfalfa; highest counts 2 per 10 sweeps in Sussex County. (Burbutis, Mason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Adults light, locally, on alfalfa at Cold Harbor, Hanover County; most severely damaged area near field of soybeans. (Sanders).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - NEW MEXICO - Light to moderate infestations in Chaves County alfalfa. (N. M. Coop. Rpt.). ALABAMA - Few larvae found in alfalfa in Lee County. (Guyton). DELAWARE - Remains present in alfalfa. (Burbutis, Mason).

PALE WESTERN CUTWORM (Agrotis orthogonia) - NEBRASKA - Very light infestation present in Box Butte, Scotts Bluff, Banner and Kimball Counties. (Pruess).

A CLIMBING CUTWORM (Feltia sp.) - CALIFORNIA - Severely damaging a 500-acre planting of alfalfa in Brawley area, Imperial County. Eighty percent of field has been 100 percent defoliated. (V. Roth).

ARMY CUTWORM (Chorizagrotis auxiliaris) - NEBRASKA - Extent of adult fall flights indicates the possibility of damaging infestations next spring, with heaviest infestations in panhandle and southwestern areas. (Pruess).

GREEN CLOVERWORM (Plathypena scabra) - ALABAMA - Plentiful in alfalfa in Lee County. (Guyton).

STRATIOMYIDS - VIRGINIA - Larvae of an undetermined species common on ground beneath wet baled soybean hay in an area of Prince Edward County. (Peery, Tarpley; Oct. 6). NORTH CAROLINA - Hermetia illucens larvae found infesting a trench silo in Cherokee County. (Nave, Farrier).

FRUIT INSECTS

Citrus Insect Situation in Florida - Mid-October - PURPLE SCALE (Lepidosaphes beckii) infested 65 percent of groves checked. Although there was a rise in activity, due to fall hatching, parasite activity will hold populations at low level in all districts. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 72 percent of groves. Activity recently took an upward trend and will increase markedly during next 4 weeks. Populations are presently average but are expected to be above average by November. Where activity is currently high, a high percentage is in young stages. High activity is in upper east coast, Orlando, Indian River, Ridge and west coast districts. CITRUS RED MITE (Panonychus citri) infested 28 percent of groves. Activity dropped and will hold near current level until end of October, then increase. Populations are at lowest point in 9 years, and will remain below average through November. Only 5 percent of groves have moderate to heavy infestations. Activity is low in all districts. CITRUS RUST MITE (Phyllocoptruta oleivora) infested 70 percent of groves. Activity took sharp upward turn and will continue to increase during next month. Fifty percent of surveyed groves have moderate to heavy infestations despite below-average population level for State as a whole. Populations will reach high range in November. Increase will be more evident on leaves than on fruit. Highest activity is in west coast, Ridge, Brooksville and upper east coast districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

CITRUS MEALYBUG (Pseudococcus citri) - CALIFORNIA - Medium to heavy, locally, on citrus in Ontario, San Bernardino County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Very heavy on some home citrus in Somerton area of Yuma County. (Ariz. Coop. Sur.).

BEE T ARMWORM (Spodoptera exigua) - CALIFORNIA - Heavy populations attacking young citrus trees in Pala, San Diego County. (Cal. Coop. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - The 1960 seasonal survey, started on March 7, completed. During the survey, 169,414 trees inspected on 5,282 properties, with negative results. Survey was very satisfactory throughout year, with good coverage accomplished both in commercial groves and properties within towns and cities previously found infested. Four years have elapsed since the last infestations were found in the State. (PPC, So. Reg.; Sept. Rpt.).

MEXICO - In the chemical control zones in the states of Nuevo Leon, Tamaulipas and Sonora, inspections conducted on 51,933 trees on 1,384 properties, with infestations being found on 161 trees on 6 properties located in municipios of Allende and Linares, Nuevo Leon. Treatments of infested areas continued. (PPC, Mex. Reg.; Sept. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Trapping operations continued underway in southern area. Number of traps in use, by counties, was as follows: Hidalgo - 1,500; Cameron - 560; Willacy - 140; Starr - 40. No positive specimens found during September. Last positive specimen trapped on June 8. (PPC, So. Reg.; Sept. Rpt.). CALIFORNIA - Trapping operations continued during September in San Diego, San Bernardino and Orange Counties, with negative results. (PPC, West. Reg.; Sept. Rpt.). MEXICO - Total of 6,810 inspections made of 1,740 traps operated in municipios of Tijuana, Ensenada and Tecate, Baja California. Fallen fruit also examined on 47 properties. All results negative. (PPC, Mex. Reg.; Sept. Rpt.).

A PECAN TWIG GIRDLER - TENNESSEE - An undetermined species causing heavy damage to pecan trees across the State. (Mullett).

BLACK-MARGINED APHID (Monellia costalis) - CALIFORNIA - Heavy on pecan trees in Chico, Butte County. (Cal. Coop. Rpt.).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Occasional light, spotty infestations found in apple orchards in Bernalillo, Sandoval and Rio Arriba Counties. (N. M. Coop. Rpt.). UTAH - Was sometimes conspicuous in northern orchards during fall season. (Knowlton).

#### TRUCK CROP INSECTS

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA eggs average 5 per plant in some Yuma County lettuce fields; larval counts very low. (Ariz. Coop. Sur.).

BET ARMYPWORM (*Spodoptera exigua*) - ARIZONA - Light to medium in cole crops in Maricopa County. (Ariz. Coop. Sur.).

A LEAF ROLLER (*Clepsis peritana*) - CALIFORNIA - Populations heavy on strawberries in Manteca, San Joaquin County. (Cal. Coop. Rpt.).

A NOCTUID (*Proxenus mindara*) - CALIFORNIA - Larvae medium in soil of strawberry plantings in Watsonville, Santa Cruz County, and heavy on plants and soil in Salinas, Monterey County. (Cal. Coop. Rpt.).

BANDED CUCUMBER BEETLE (*Diabrotica balteata*) - FLORIDA - Infesting 1-2 percent of young seeded tomatoes in Redlands area of Homestead, Dade County. Det. by D. O. Wolfenbarger. (Fla. Coop. Sur.).

A FLEA BEETLE - OHIO - Larvae of an unidentified species caused widespread injury to 100 acres of turnip tubers in Franklin County, for the second successive year on the same farm. (Holdsworth, Oct. 17).

A WIREWORM - GEORGIA - An undetermined species caused very heavy damage to sweetpotatoes in Leesburg area. (Glover, Oct. 4).

NEMATODES (undetermined) - WYOMING - Many found in tissue samples of sugar beets and alfalfa; also found in soil samples from fields of these two crops. (Fullerton).

#### COTTON INSECTS

PINK BOLLWORM (*Pectinophora gossypiella*) - MEXICO - Surveys in western area (states of Baja California, Sonora and Sinaloa) during September were negative. (PPC, Mex. Reg.).

COTTON LEAFWORM (*Alabama argillacea*) - GEORGIA - Light on cotton in Spalding County; noneconomic, due to lateness in season. (Beckham).

COTTON APHID (*Aphis gossypii*) - NEW MEXICO - Populations moderately heavy in a number of cotton fields in Dona Ana County; honeydew a problem in several fields. (N. M. Coop. Rpt.).

A SPIDER MITE (*Tetranychus* sp.) - NEW MEXICO - Late buildup observed in several fields of cotton in northern Dona Ana County. (N. M. Coop. Rpt.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - CALIFORNIA - *Dendroctonus jeffreyi* killing Jeffrey pines in groups of 3-12 in 400-acre stand in Mount Waterman-Buckhorn Canyon area, Angeles National Forest, a high recreation area. (G. B. Coleman). *Ips* sp. and *D. brevicornis* killing single trees and groups of ponderosa pines in 640-acre stand in Stump Springs area and in 300-acre stand in Big Creek area, Sierra

National Forest, Fresno County. Part of area is recreational. Control logging begun. (D. Flohr).

A PHYCITID (*Dioryctria abietella*) - CALIFORNIA - Larvae infesting cones of coast redwood in Orick area, Humboldt County. This is probably a new host record; pest normally attacks grand fir and Douglas-fir. The species is very abundant in northern half of State this year and infesting trees other than its normal hosts. (E. A. Hofsted, C. B. Eaton).

NANTUCKET PINE MOTH (*Rhyacionia frustrana*) - GEORGIA - Heavy and general in Jefferson County. (Fortson). OKLAHOMA - Damaging Austrian pines throughout Atoka County. (Okla. Coop. Sur.)

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - NEVADA - Infesting numerous pines in Reno, Washoe County. (Lauderdale). WYOMING - Present on many pine and spruce trees in Laramie area of Albany County. (Fullerton).

APHIDS - DELAWARE - An aphid, probably *Cinara strobil*, very abundant on white pines in Newark area, New Castle County; injury moderately heavy. (Burbutis, Mason). WYOMING - Winged adults of *Pemphigus* sp. present on many cottonwood and poplar trees in Albany County. (Fullerton). NEVADA - *Eulachnus rileyi* moderate to heavy on several mugho pines in Reno, Washoe County; needles yellowing and dropping. (Bechtel).

A PINE SAWFLY (*Neodiprion excitans*) - ILLINOIS - Two specimens collected on *Pinus echinata* on May 11, 1960, at Wolf Lake, Union County. First midwestern record as well as a new State record for this species. Det. by H. H. Ross. (Ill. Ins. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - OREGON - Found for the first time in the State infesting twigs of seedling elms in a nursery in Klamath Falls, Klamath County, on October 10. Determination confirmed by W. J. Chamberlin. Subsequent survey in city indicates species may be restricted to southeastern suburban area. (Vertrees).

TWIG GIRDLER (*Oncideres cingulata*) - OKLAHOMA - Results of damage to shade trees continues evident throughout eastern two-thirds of State. (Okla. Coop. Sur.). TEXAS - Light infestations girdling mimosa trees in Aransas County. (Newton).

FALL WEBWORM (*Hyphantria cunea*) - TEXAS - Heavy infestations of this species and *Datana integerrima* have stripped practically all foliage from most native pecans and some oaks in Fort Bend County. (Kouirek). NEW MEXICO - Continues damaging to shade trees in southern counties. Larvae also a nuisance crawling on walks, walls and entering homes in many areas of State. (N. M. Coop. Rpt.).

PUSS CATERPILLAR (*Megalopyge opercularis*) - OKLAHOMA - Infestation of shade trees continues to cause concern in several south central cities. Populations increased during past week in Choctaw County and limited infestations noted on some elm, hackberry and sycamore trees in Stillwater. (Okla. Coop. Sur.). ALABAMA - Continues active in Mobile County. (Seibels, Lockhart). NORTH CAROLINA - Present in Columbus County. (Raper, Farrier).

LEPIDOPTEROUS LARVAE - OKLAHOMA - Several species skeletonizing and defoliating oaks throughout northeastern quarter of State. (Okla. Coop. Sur.).

AZALEA CATERPILLAR (*Datana major*) - FLORIDA - Group of second-instar larvae collected October 4 on azalea at University of Florida campus at Gainesville, Alachua County, are first specimens seen this year. Det. by L. A. Hétrick. (Fla. Coop. Sur.).

SADDLEBACK CATERPILLAR (*Sibine stimulea*) - ALABAMA - Light in a nursery near Irvington, Mobile County. (Seibels, Lockhart). NORTH CAROLINA - Feeding on azaleas in Bladen County; present in Bertie County. (Harper, Simmons, Farrier).

A SPHINGID (Pseudosphinx tetrio) - FLORIDA - Larvae collected on frangipani (Plumeria sp.) at Sarasota, Sarasota County, on August 28 by T. E. Whitmore. This is a first record for Sarasota County and also the most northern record in the State. (Fla. Coop. Sur.).

COCCIDS - CALIFORNIA - Rhizococcus falcifer heavy on marigold roots in Lodi, San Joaquin County. Light populations of Pseudococcus microcirculus on orchid leaves in a nursery in San Gabriel; first record for Los Angeles County. (Cal. Coop. Rpt.). TEXAS - Icerya purchasi moderate on pittosporum in Pecos County. (Posey). VIRGINIA - Unaspis euonymi heavily infested euonymus at homes in West Point, King William County; Hurt, Pittsylvania County; and at Luray, Page County. (Saunders, Rowell; Oct. 10).

A LEAFHOPPER (Fieberiella florii) - CALIFORNIA - Heavy on Ligustrum sp. in Stockton, San Joaquin County, and on shrubs in Highlands, San Bernardino County. (Cal. Coop. Rpt.).

EARWIGS - GEORGIA - An unspecified species heavy in yards and homes in Dougherty and Terrell Counties. (Glover, Oct. 4). TEXAS - Causing considerable nuisance in flower beds and homes in Tom Green County. (Boyd).

AN ERIOPHYID MITE (Aculus teucrii) - OHIO - Found attacking Teucrium chamaedrys at Painesville, August 15. This is a new North American record. Det. by H. H. Keifer. (Holdsworth).

#### INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - OKLAHOMA - Annoying in homes throughout Pittsburg and Atoka Counties. (Okla. Coop. Sur.). DELAWARE - Aedes vexans adults active and biting in northern Sussex County; A. sollicitans adults fairly abundant and annoying in eastern Kent County; and Culiseta melanura present in an artificial resting box in northern Sussex County. (Burbutis, Mason). FLORIDA - Psorophora confinnis remains generally light in Gainesville area, but is sufficiently pestiferous to drive most people from their patios into their houses at dusk. P. confinnis taken also at Chattahoochee and Florida Caverns State Park on October 5-6. Other species taken biting at Florida Caverns State Park were Aedes atlanticus or A. tormentor (most abundant), A. infirmatus, P. ciliata, P. howardii and P. ferox. The latter also taken at Torreya State Park, along with P. horrida. (Fla. Coop. Sur., Oct. 14).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Counts averaged 10 per animal on 40 head of beef cattle checked in Pushmataha County. (Okla. Coop. Sur.).

HORN FLY (Siphona irritans) - OKLAHOMA - Continued to cause concern to stockmen in eastern two-thirds of State. Counts in Pushmataha County averaged 500 per animal on 55 head of cattle checked. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Several species continued to infest cattle in southeast area; counts ranged 0.75-1.5 per animal. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Annoying throughout Sequoyah County. (Okla. Coop. Sur.).

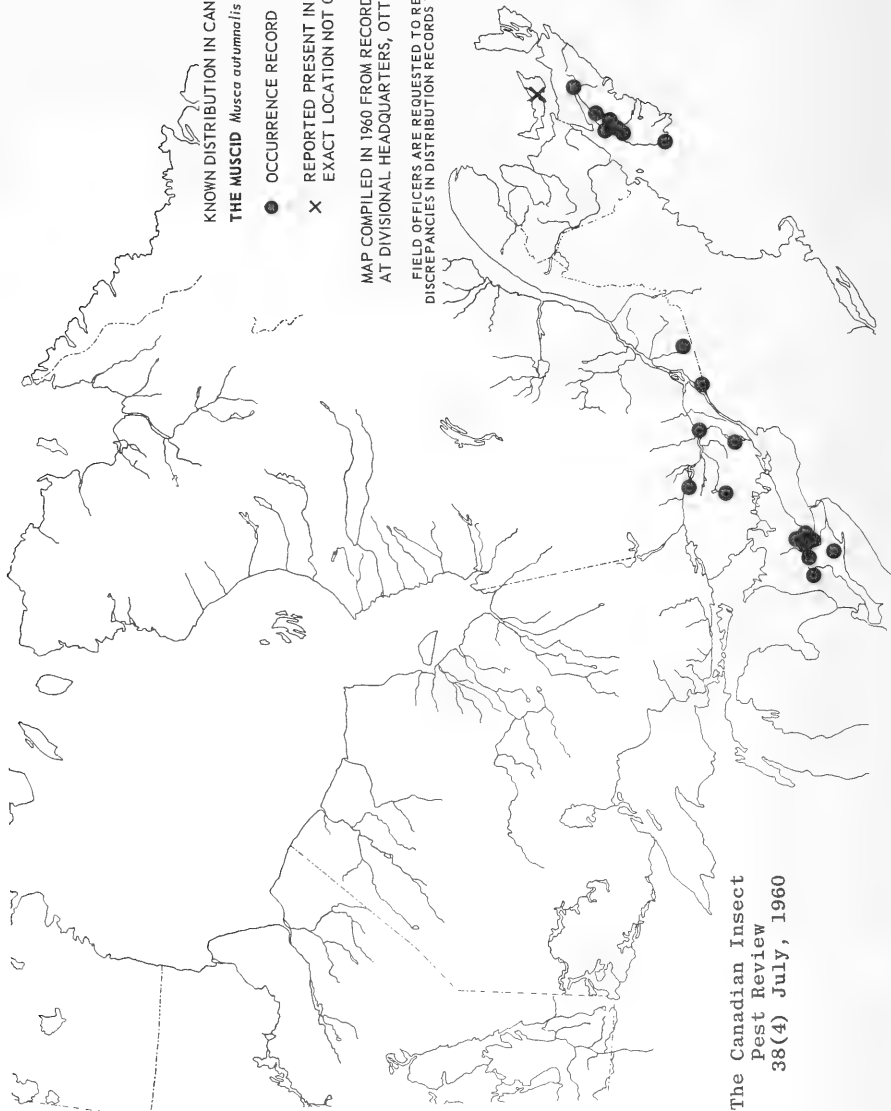
FACE FLY (Musca autumnalis) - INDIANA - Infestations remained active in Tippecanoe and Carroll Counties until first freezing weather, October 20; household infestations reported from Carroll County. (Matthew). KANSAS - Three adults collected from a small herd of Holstein heifers and cows, on pasture, in Marshall County, northeast area. Det. by C. W. Sabrosky. This is first report from the State. (Knapp, Peters). IOWA - Causing annoyance in houses quite generally across State. Farm homes most commonly infested, but several reports of large numbers in homes in towns received. Distribution of species now includes 29 counties which cover most of State, except north central area. (Gunderson).

KNOWN DISTRIBUTION IN CANADA  
THE MUSCID *Musca autumnalis* Deg.

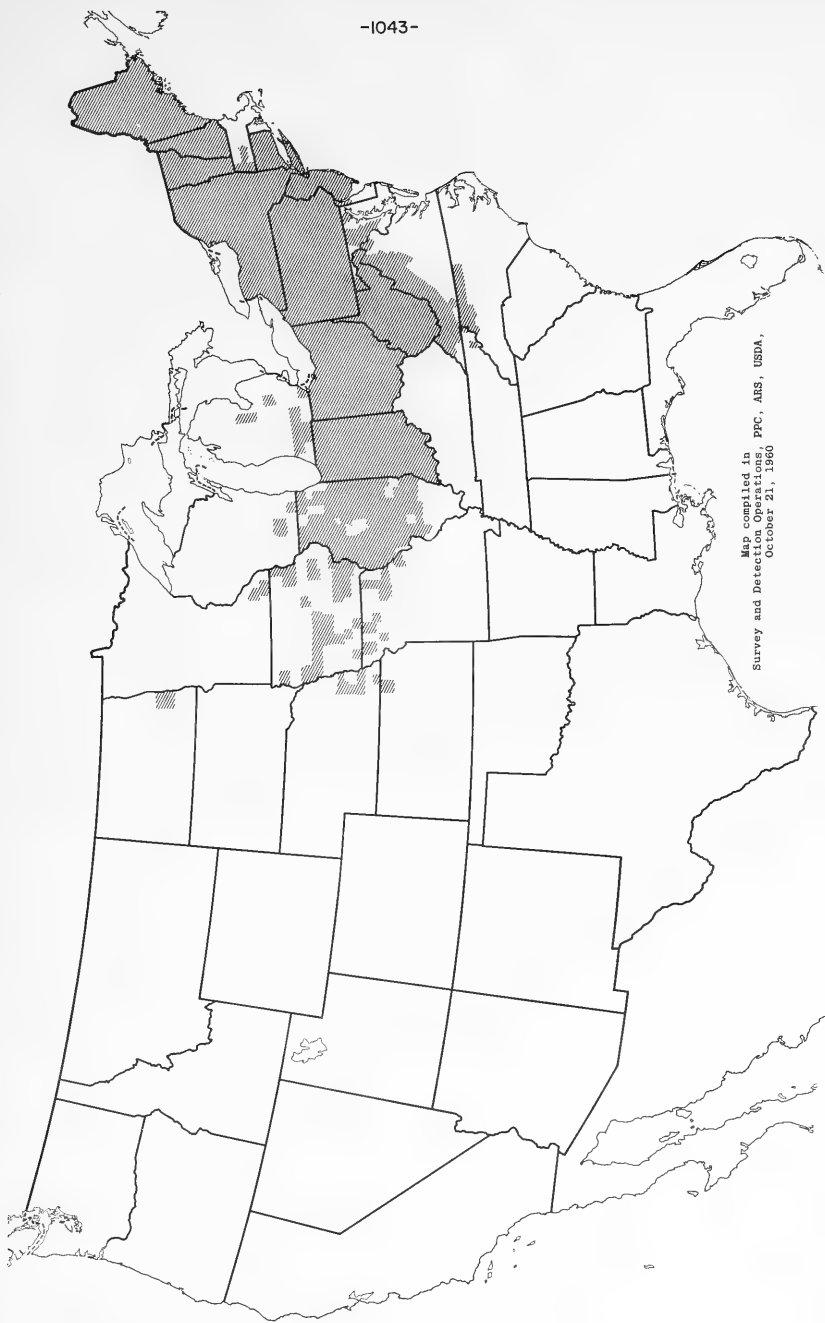
- OCCURRENCE RECORD
- X REPORTED PRESENT IN PROVINCE --  
EXACT LOCATION NOT GIVEN

MAP COMPILED IN 1960 FROM RECORDS AVAILABLE  
AT DIVISIONAL HEADQUARTERS, OTTAWA, CANADA

FIELD OFFICERS ARE REQUESTED TO REPORT OBVIOUS  
DISCREPANCIES IN DISTRIBUTION RECORDS TO HEADQUARTERS



DISTRIBUTION OF FACE FLY (*MUSCA AUTUMNALIS*)



SCREW-WORM (*Callitroga hominivorax*) - KANSAS - Larvae collected from a wound in a hog's ear in Riley County. (Knapp, Pitts). OKLAHOMA - Counties reporting cases of infestations during week were Beaver, Washington, Delaware, Okfuskee, Haskell, Cleveland, Pontotoc, Stephens, Jefferson and Choctaw. (Okla. Coop. Sur.). LOUISIANA - Infestations reported as follows: Red River Parish - 1; Richland Parish - 2; Natchitoches Parish - 2; Franklin Parish - 6. Reports from Franklin Parish included an infestation of a dog. (Spink).

Current Screw-Worm Situation Report - Week Ending October 23, 1960

State	Cumulative Totals - 1960		Counties or Parishes	
	Cases	Premises		
Alabama	1	1	Geneva	
Arkansas	35	30	Chicot Desha Ashley Crawford	
Louisiana	110	70	Richland Red River Franklin Rapides De Soto	Ouachita Natchitoches Caldwell Madison
Mississippi	67	33	Issaquena Sharkey Sunflower Washington Leflore	
Totals	213	134	19	

Screw-worm Cases Intercepted at Inspection Stations: 1960 - 28 to date.  
(Anim. Dis. Erad. Div.)

A FLANNEL MOTH - GEORGIA - Light infestation in Albany, Dougherty County, causing irritation to some residents. (Glover, Oct. 4).

HUMAN FLEA (*Pulex irritans*) - INDIANA - Troublesome to people and around farm lots in Pulaski and Porter Counties. (Butts).

CATTLE LICE - UTAH - Dippings at Beaver are 1,500 head with 4,500 more to be dipped. (Knowlton, Esplin).

A SPRINGTAIL (*Entomobrya unostriata*) - CALIFORNIA - Medium infestations occurring in a public institution, reported biting people, in Crescent City, Del Norte County. (Cal. Coop. Rpt.).

BROWN DOG TICK (*Rhipicephalus sanguineus*) - INDIANA - Troublesome in homes of dogowners in Lafayette area. (Butts). ALABAMA - Infestations increasing in Dog River area of Mobile County. (Seibels, Lockhart).



STORED-PRODUCT INSECTS

A TENEBRIONID (Platydema ruficorne) - NEBRASKA - Infesting shelled corn in Colfax County. (Roselle).

A FUNGUS BEETLE - NEBRASKA - Heavy infestations of an undetermined species present in farm buildings of a hatchery in east central area. (Roselle).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - OKLAHOMA - Common (0.1-2 per sweep) in alfalfa checked in southern portion of State. (Okla. Coop. Sur.).

NABIDS (Nabis spp.) - DELAWARE - Averaged 4 per 10 sweeps in alfalfa statewide; the most common of many beneficial species present. (Burbutis, Mason).

LACEWINGS (Chrysopa spp.) - OKLAHOMA - Ranged up to 1 per sweep in alfalfa surveyed in southern area. (Okla. Coop. Sur.).

MISCELLANEOUS INSECTS

ELM LEAF BEETLE (Galerucella xanthomelaena) - NEVADA - Large numbers of adults moving into homes in Reno, Washoe County. (Lauderdale).

OLD-HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - Infesting a home in Front Royal, Warren County (Weddle, Rowell; Oct. 13) and 1 in Roanoke, Roanoke County (Rowell, Oct. 19).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Migrating larvae a problem around homes near cotton fields in some central areas. (Ariz. Coop. Sur.).

CRICKETS - MARYLAND - Unspecified species more abundant than usual in fields and around homes in southern counties. (U. Md., Ent. Dept.).

AUSTRALIAN COCKROACH (Periplaneta australasiae) - ALABAMA - Light to moderate numbers in grain warehouses in Mobile. (Seibels, Lockhart).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Abundant and annoying around some homes in Baltimore. (U. Md., Ent. Dept.). DELAWARE - Invading homes in New Castle County. (Burbutis, Mason). UTAH - Populations continue heavy in Cache, Salt Lake, Weber and Box Elder Counties. Household annoyance often serious. (Knowlton).

GIANT HORNET (Vespa crabro germana) - GEORGIA - Specimens collected at Blairsville, Union County, and at Hartwell, Hart County, are new records for these 2 counties. (Taylor, Davies).

MILLIPEDES - DELAWARE - Unspecified species fairly numerous and invading homes in New Castle County. (Burbutis, Mason).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Perid. saucia	Prod. ornith.	Protoparce sexta	quinq.	Helio. zea
<b>ARIZONA</b>								
Mesa 10/10-16				6	282			39
<b>ARKANSAS</b>								
Hope 10/13-19	26		8					208
Morrilton 10/13-19	14		8					66
Kelso 10/13-19	27		1					21
Fayetteville 10/13-19	6		2					100
<b>CALIFORNIA</b>								
Davis 10/12-18	132		213	4				13
<b>FLORIDA</b>								
Monticello 10/18			8					5
Quincy 10/17		3	13					84
<b>KANSAS</b>								
Garden City 10/10-12, 14-16	84	3	39	13				184
Hays 10/14,16-17	22	13	2	17	6			430
Manhattan 10/13-20	4	86	2	4	9			516
Wathena 10/9-13	20		4	6				80
<b>MISSISSIPPI</b>								
*Stoneville 10/14-20	1,846	1,006	111		85			1,201
<b>NEBRASKA</b>								
Lincoln 10/15-21	5		10	4				61
Scotts Bluff 9/30-10/5	6		19	2				11
Scotts Bluff 10/6-12	10		16	4				49
<b>SOUTH CAROLINA</b>								
Charleston 10/3-9	19	16	8		10	2		64
Charleston 10/10-16	8	22	15		19		3	70
Charleston 10/17-23	10	14	30		10			59
Clemson 10/8-14	37	68	5	1	97		1	26
Clemson 10/15-21	25	26	6		36			16
<b>TENNESSEE (Counties)</b>								
Maury 10/11-17	6		8		12	1	1	52
Robertson 10/11-17	20	6	8	4	10	2	4	28
Cumberland 10/11-17	18			2			2	40
Greene 10/11-17	20		4	16	8	3	8	84
Blount 10/11-17			4		10			24
Johnson 10/11-17	12		4	6	30			16
<b>TEXAS</b>								
Brownsville 10/8-14	149	1,417	85		7	23	3	294
Waco 10/15-21	195		4	250	65			366

Additional Collections

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA (Mesa 10/10-16) - 212; CALIFORNIA (Davis 10/12-18) - 580.

\* Two traps - Stoneville

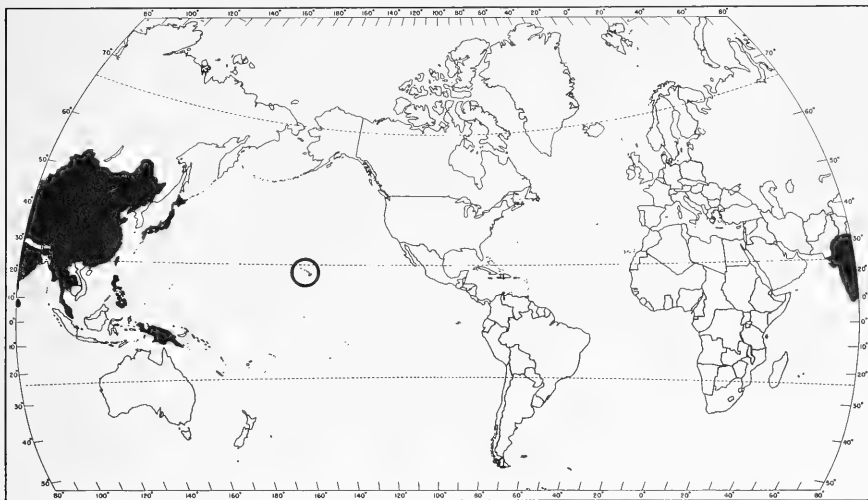
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES<sup>1</sup>

SWEETPOTATO STEM BORER (*Omphisa anastomosalis* (Guen.))

Economic Importance: This pyraustid borer is a serious pest of sweetpotatoes in the Indo-Malayan Region and Hawaii. In Hawaii it has been referred to as perhaps the most injurious enemy of this crop, but in China it is reported to be a minor pest. The larvae damage both roots and stems and may kill the plants. The insect has been intercepted occasionally at U. S. ports of entry.

Distribution: China, Formosa, India, Ceylon, Japan, Burma, Indonesia (Java), New Guinea, Thailand, Philippine Islands, Hawaii, Malaya.

Hosts: Sweetpotatoes. Also reported from some other vegetable crops.



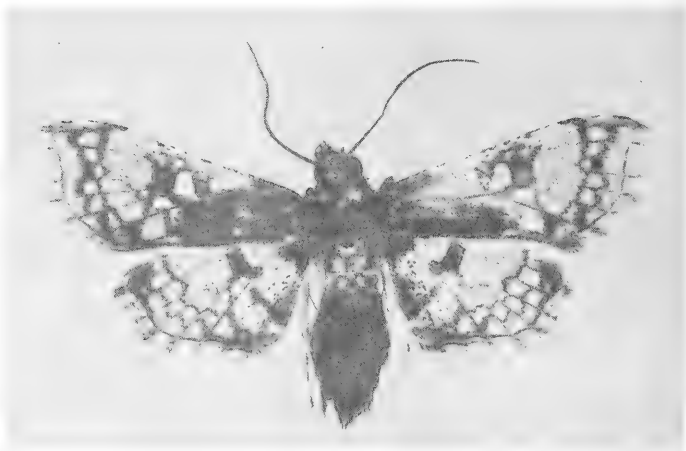
General Distribution of *Omphisa anastomosalis*

Life History and Habits: In Hawaii, eggs are laid singly or in groups of 2 or 3 in crevices in the stems or on the leaves. The young larvae bore into the stem and roots where they tunnel and feed. The larvae spin a light cocoon and pupate within the plant parts. One report shows that a female in confinement in Hawaii laid 70 eggs in one night. In this case, the egg stage lasted 6 days, larval period 27 to 36 days and the pupal period 12 to 16 days.

(Pyraustinae, Lepidoptera)

1- Excluding Hawaii

Description: Full-grown LARVA 25-30 mm. long by 3.5 mm. wide; pale yellowish-white with conspicuous brown, very broad, flat setiferous plates; head yellowish-brown, a black line on postero-lateral margin, ocelli black except the two upper and lowest one which are white, mandibles black; prothoracic shield pale yellowish with markings; dorsal tubercles large, in two rows, beginning with mesothorax, two per segment, except on the anal, and abdominal segments 8 and 9. PUPA about 16 mm. long by 3 mm. wide, nearly cylindrical, abruptly tapering at the two posterior segments; uniform medium brown with a slightly darker band on posterior margin of abdominal segments. Wing cases pointed, extending to posterior margin of fourth abdominal segment. Cremaster very short, blunt with a few hooked spines. Pupa is formed in slight cocoon. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(44):10-28-60



Adult of Omphisa anastomosalis



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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

FALL ARMYWORM continues damaging in Oklahoma and Texas and reported abundant and causing damage to fall-seeded wheat in extreme southern Illinois. SORGHUM WEBWORM controls applied in Hidalgo County, Texas. CORN LEAF APHID and RUSTY PLUM APHID infestations heavy on sorghum in central area of Arizona. (p. 1051). SPOTTED ALFALFA APHID causing economic damage to alfalfa in areas of Morrow County, Oregon, and THREE-CORNERED ALFALFA HOPPER remains relatively high on alfalfa in Maricopa County, Arizona, and Hidalgo County, New Mexico. (p. 1052). Additional WHITE-FRINGED BEETLE infestations found in North Carolina. (p. 1053).

Second MELONWORM adult of season taken in light trap at Bard, Imperial County, California, and foliage damage heavy on cantaloups, locally, in Zavala County, Texas. (p. 1054).

SPRUCE BUDWORM infestation moderate on 697,760 acres of Douglas-fir and white fir in Carson and Santa Fe National Forests, New Mexico. (p. 1054).

Current SCREW-WORM situation report. (p. 1056).

CORRECTIONS (p. 1059).

INSECT DETECTION: New state records reported were a delphacid (Sogata cubana) in Louisiana (p. 1052) and a parasite (Coccophagus flavifrons) and a limacodid (Sisyrosea textula) in South Carolina (p. 1057). New county records reported were sorghum midge in Kern and Kings Counties, California (p. 1051), and southern green stink bug in Columbus County, North Carolina (p. 1054).

A special survey of BOLIVIAN INSECTS. (p. 1061).

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WANTED -- PLANT PEST DETECTIVES, a 13½-minute color motion picture designed to promote plant pest detection at the public level, has recently been released by the U. S. Department of Agriculture. Prints of the film will be available in Plant Pest Control Division offices and Land Grant College libraries.

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Reports in this issue are for the week ending October 28 unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

NOVEMBER 1960

The Weather Bureau's 30-day outlook for November calls for temperatures to average below-seasonal normals over the southern half of the United States, except above along the West Coast. Above-normal temperatures are predicted for the Northeast and the Northern Plains, with near normal in the remainder of the Nation. Precipitation is expected to exceed normal in the northeast quadrant of the country. Subnormal amounts are anticipated west of the Continental Divide and near normal amounts elsewhere in the Nation.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING OCTOBER 31

The week was a few degrees colder than normal from the Great Lakes to the middle Atlantic coast, and milder than the previous week everywhere east of the Rocky Mountains. In the Far West, temperatures for the week averaged about normal in northern sections, a few degrees lower than for the previous week, and well above normal in the South for the second consecutive week. Cold air overspread the eastern third of the Nation early in the period and reduced temperatures to subfreezing levels as far south as extreme northern Georgia, and the first general light freeze of the season occurred in North Carolina. Scattered light frost occurred in northern and central South Carolina. A low of 9° was recorded at Gordon, Wisconsin, on the 24th, and 19° at East Lansing, Michigan, on the 25th equaled the previous low for October there. In the Far West, an inflow of cold air reduced temperatures to below-normal levels over the weekend.

Precipitation on 2 to 4 days over most of the eastern half of the country generally totaled from 1/2 to over an inch, except in the Ohio Valley and Southeast, where amounts were less than 1/2 inch. Heavy rains in central and southeastern Texas for the third consecutive week caused major flooding along several streams. Rainfall in the south central portion of the State on the 25th totaled from 5 to 10 inches below San Antonio, and a heavy fall in the Austin area on the 28th totaled from 7 to 10 inches. In the Far West, precipitation fell almost daily in northern coastal areas where weekly totals exceeded 2 inches, and very light amounts fell on several days in areas east of the Cascades. In southern areas, precipitation was extremely light and scattered.

Snowfall was rather widespread in northern areas, occurring in the Great Plains as far south as northwestern Kansas, where accumulations were as much as 1 inch, locally, on the 26th. In northeastern Ohio, the first snowfall of the season occurred at the beginning of the week, up to 8 inches were reported from northwestern Pennsylvania, and accumulations of several inches occurred at elevations above 1,500 feet in New York State.

During a storm over New England at the beginning of the period, thunderstorms occurred in southern sections. Lightning caused damage in places, and hail 1/2 inch in diameter fell in Fitchburg and Boston, Massachusetts. A band of snow from Rhode Island through New Hampshire ranged up to 6 inches in the latter State, and 2 to 4 inches fell, locally, in central and eastern Massachusetts. A trace of snow at Boston was the earliest there since 1920. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - ILLINOIS - Abundant and causing some damage to fall-seeded wheat in extreme southern area. (Ill. Ins. Rpt., Oct. 25).  
OKLAHOMA - A new generation of larvae damaging fields of small grain and fall-seeded alfalfa in southern portion of State; causing damage to alfalfa and small grains in McIntosh County. Continued damage noted in some small grains in panhandle area and a check of soil samples taken from a crop reserve area in Beaver County contained 216 pupae per square yard, probably this species. Few isolated larvae found in some fields of small grain in northwest area; no extensive damage noted in area during past 2 weeks. (Okla. Coop. Sur.). TEXAS - Continues to damage small grains in central and north central areas. Some young grain completely killed or severely damaged; resewing necessary. (Texas Coop. Rpt.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Averaging 6 larvae per stalk in late grain sorghum and causing some lodging in Brazos County. (Randolph).

EUROPEAN CORN BORER (Pyrausta nubilalis) - WISCONSIN - Flights caught in black-light traps between October 5-15 in Dane and Grant Counties. Columbia and Waushara County traps discontinued earlier, but catches of P. nubilalis recorded on September 18 and 15, respectively. (Wis. Coop. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - NEW MEXICO - Larvae very abundant in roots of corn in Luna and Hidalgo Counties. (N. M. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - NEBRASKA - Larvae active and feeding on corn ears in field in Wayne County. (Bergman). DELAWARE - Larvae slightly increased on alfalfa statewide, with high count 3 per 10 sweeps in New Castle County. (Burbutis, Mason).

A NOCTUID (Polia adjuncta) - WISCONSIN - Larvae observed feeding commonly on silks and kernels of corn in Rosendale area, Fond du Lac County, on September 15. Det. H. W. Capps. (Wis. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Several hundred acres of late grain sorghum infested in Hidalgo County; controls being applied. (Deer).

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Light in milo in Shafter area of Kern County and Hanford area of Kings County. Both new county records. (Cal. Coop. Rpt.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEBRASKA - Few adults still active in northeastern area on corn. (Bergman).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Infestations very heavy, along with Hysteroneura setariae, on central area sorghum. (Ariz. Coop. Sur.). OKLAHOMA - Occasional to 6 per linear foot of row in scattered fields of small grains across southern portion of State. Common in Johnson grass, averaged 60 per square foot, in area checked in Choctaw County. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Light in wheatfield in Atoka County. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Light in few isolated fields of small grain in southern area. (Okla. Coop. Sur.).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Infestations continue to increase on sorghum in central area, with populations very heavy in most fields. (Ariz. Coop. Sur.).

RICE STINK BUG (Oeobalus pugnax) - LOUISIANA - Greatly reduced in rice. (Spink).

A STINK BUG (Euschistus impictiventris) - ARIZONA - Light to medium populations in Maricopa County sorghum, with considerable damage to heads in some fields. (Ariz. Coop. Sur.).

LEAFHOPPERS - OKLAHOMA - Unidentified species common in small grains in most areas of State. (Okla. Coop. Sur.).

A DELPHACID (Sogata cubana) - LOUISIANA - One specimen collected at Henderson, St. Martin Parish, and one at Bunkie, Avoyelles Parish. Det. by J. P. Kramer. This is a new State record. (Spink).

GRASSHOPPERS (several species) - OKLAHOMA - A preliminary egg survey indicates late-season migration of Melanoplus bilituratus into panhandle area. A check of 1,279 fields of small grain in northwest-panhandle area indicates that 15 percent of fields had marginal damage (average 3.5 feet) throughout the panhandle counties, while damage in northwest counties primarily limited to northeastern Woodward County, southern Woods County and northwestern Major County. Fields checked in other parts of northwest-north central areas failed to show any marginal damage. Causing localized damage to alfalfa and small grains in Craig County. (Okla. Coop. Sur.). UTAH - Melanoplus spp. and Trimerotropis sp. still numerous to the tops of the mountains, 1-5 per square yard in sage and meadow locations, in East Canyon, Cache County. (Knowlton).

HAIRY CHINCH BUG (Blissus leucopterus hirtus) - MARYLAND - Adults caused considerable injury to a large lawn at Frostburg, Allegany County. (U. Md., Ent. Dept.).

GRUBS - NORTH CAROLINA - Undetermined species causing damage to lawns and pastures in Hoke County, with one group determined as Popillia japonica. (Chadwick).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Larvae heavy in dichondra lawns in Tracy, San Joaquin County. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OREGON - Populations causing economic damage to alfalfa in Buttercreek and Cecil areas of Morrow County. (Goeden). NEW MEXICO - Generally light in alfalfa in Virden Valley, Hidalgo County. (N. M. Coop. Rpt.). TEXAS - Averaged 10 per sweep in Reeves County alfalfa. (Turney). OKLAHOMA - Light, up to 8 per sweep, in alfalfa in southern area. (Okla. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - TEXAS - Averaged 2 per sweep in alfalfa in localized areas of Reeves County. (Turney). DELAWARE - Counts below economic proportions in alfalfa throughout State. (Burbutis, Mason). OKLAHOMA - Light, 0-2 per sweep, in alfalfa in Choctaw County. (Okla. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Light, local infestations on alfalfa in Reeves County. (Turney). ARIZONA - Counts in some Maricopa County alfalfa averaged 40 per 10 sweeps. (Ariz. Coop. Sur.). NEW MEXICO - Averaged 1-2 adults per sweep in alfalfa at Virden, Hidalgo County; very little noticeable damage. (N. M. Coop. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Light to medium, 0.5-3 per sweep, in alfalfa in Choctaw County. (Okla. Coop. Sur.).

RAPID PLANT BUG (Adelphocoris rapidus) - DELAWARE - Adults present in alfalfa over State. (Burbutis, Mason).

ALFALFA CATERPILLAR (Colias philodice eurytheme) - TEXAS - Averaged 3 larvae per sweep, with numerous adults, in Reeves County alfalfa. (Turney). UTAH - Present, but not numerous, in Cache County alfalfa. (Knowlton).

A WEBWORM (Loxostege sp.) - OKLAHOMA - Damaging alfalfa in localized areas of Choctaw County. (Okla. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Light to medium, 0.1-2 per sweep, in alfalfa in Choctaw County. (Okla. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - ALABAMA - Heavy adult infestations on alfalfa in Randolph County. Destroyed first two crops of alfalfa in spring of 1960 in same field. This contrasts with report in CEIR 10(44):1037, in Lee County. (Guyton).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults increased slightly in alfalfa over State, with highest counts 3 per 10 sweeps in field in Kent County. (Burbutis, Mason).

FULLER ROSE BEETLE (Pantomorus godmani) - ALABAMA - Numerous in area of Tallapoosa County; caused considerable damage to young vetch. (Barwood).

A BILLBUG (Calendra sp.) - OREGON - Numerous adults on sidewalks in Salem and Corvallis during early October; no grass injury evident. (Capizzi).

BLISTER BEETLES - ALABAMA - Causing considerable damage to crops in area of Tallapoosa County. (Barwood).

WHITE-FRINGED BEETLES (Graphognathus spp.) - NORTH CAROLINA - Delimiting survey of infestation in southern Jones County revealed several acres infested at that locality and an infestation found in Maysville. Extension of infestation at Weldon, Halifax County, found. In Northampton County, one acre previously found infested at Pleasant Hill now increased to 51 acres and about 82 acres found infested in Garysburg, mostly urban; about 13 acres farmland at Garysburg. (Branan, Whitmer).

SLUGS - WISCONSIN - A nuisance on all forage crops in most areas of State. (Wis. Coop. Sur., Oct. 21).

#### FRUIT INSECTS

A CARPOSINID (Bondia comonana) - CALIFORNIA - Heavy in almond nuts in Denair, Stanislaus County. (Cal. Coop. Rpt.).

PACIFIC SPIDER MITE (Tetranychus pacificus) - CALIFORNIA - Heavy on walnut in Castaic, Los Angeles County. (Cal. Coop. Rpt.).

SPIREA APHID (Aphis spiraeicola) - CALIFORNIA - Heavy on citrus in a nursery in Vista, San Diego County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

CABBAGEWORMS - ALABAMA - Pieris rapae, Trichoplusia ni and Plutella maculipennis fairly common on collards in Lee County. One larva of Evergestis rimosalis also found. (Guyton). DELAWARE - All instar larvae of T. ni present to common on cabbage and cauliflower in Sussex County, causing moderately heavy feeding injury; fairly common on cabbage in Kent County, causing light feeding injury. P. rapae larvae fairly abundant in field of cabbage in Sussex County, causing heavy feeding injury; present to fairly common in other fields of cabbage and cauliflower in Kent and Sussex Counties, causing moderate feeding injury. (Burbutis, Mason).

FALSE CHINCH BUGS (Nysius spp.) - TEXAS - Heavy, local infestations on mustard and turnips in Zavala County. (Harding).

SOUTHERN GREEN STINK BUG (Nezara viridula) - NORTH CAROLINA - Large numbers on garden plants (field peas, okra, beans, collards). All stages present, nymphs to adults, in Columbus County. (Read). New county according to ARS records.

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults common in carrots and turnips in New Castle County; causing light feeding injury. (Burbutis, Mason).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - ALABAMA - Heavy infestations on turnip leaves in Lee County. (Guyton). OKLAHOMA - Heavy on various crucifers in Payne and Tulsa Counties. (Okla. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Prevalent in field of turnips in New Castle County; present on cabbage, spinach and kale in Sussex County. (Burbutis, Mason).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - LOUISIANA - Heavy infestations observed in several fields of seedling cabbage in Lafourche Parish. Small ant mounds present at base of majority of plants and damage to stems observed in most instances. Many of plants dead. This field replanted twice. Heavy cutworm damage also noted; however, no cutworms found around plants. (Spink).

MELONWORM (Diaphania hyalinata) - TEXAS - Heavy, local infestations on cantaloups in Zavala County; foliage damage heavy. (Harding). CALIFORNIA - Second adult of season taken in light trap at Bard, Imperial County. (Cal. Coop. Rpt.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults present in spinach in Sussex County and carrots in New Castle County, with noticeable feeding injury to both crops. (Burbutis, Mason).

NITIDULIDS - CALIFORNIA - Heavy populations of Carpophilus freemani developing in tomato culls and fruit dumps in Woodland, Yolo County. Haptoncus luteolus also present in tomato culls in same area, and in grapes in Winton, Merced County. (Cal. Coop. Rpt.).

VINEGAR FLIES (Drosophila spp.) - CALIFORNIA - D. busckii heavy in tomato culls in Sycamore and D. simulans in Tuttle, Colusa County. (Cal. Coop. Rpt.).

HOP APHID (Phorodon humuli) - UTAH - Common on hop leaves in Logan Canyon. (Knowlton).

RASPBERRY ROOT BORER (Bembecia marginata) - OREGON - Hatch at approximately 19 percent by October 17 in one Marion County planting. (Rosenstiel).

LONG-TAILED MEALYBUG (Pseudococcus adonidum) - CALIFORNIA - Medium infestation on strawberry in San Diego, San Diego County. (Cal. Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae of this species and Proxenus mindara medium in strawberry plantings in Watsonville, Santa Cruz County. These species have been a problem on strawberry this season. (Cal. Coop. Rpt.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW MEXICO - Generally moderate infestation on 697,760 acres of Douglas-fir and white fir in Carson and Santa Fe National Forests and adjacent private lands. Marked increase in intensity occurred during 1960. Moderate to heavy damage can be expected on 1961 growth. (N. M. Coop. Rpt.).

A SCOLYTID (Pityophthorus sp.) - CALIFORNIA - Probably P. confertus, severely damaging pinyon pines in widespread area around Juniper Hills in Valermo area of Los Angeles County. Damage associated with drought and high temperatures. (G. Coleman).

WHITE-PINE SAWFLY (Neodiprion pinetum) - WISCONSIN - Heavily infested white pine in a cemetery at Mineral Point. Of 27 trees, 12 trees 90-100 percent defoliated and remaining trees 50 percent defoliated. Some larvae still present on October 20. (Wis. Coop. Sur., Oct. 21).

A PINE NEEDLE MIDGE - WISCONSIN - Causing yellowing of current needles of red pine in Eau Claire and Sauk Counties. Some larvae still in needles as late as October 21. Infestations extensive in these 2 counties. (Wis. Coop. Sur., Oct. 21).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Infestations on shade trees continue to cause concern in Ardmore area; populations apparently declining in Choctaw County. (Okla. Coop. Sur.).

A MAPLE CALLUS BORER (Sylvora acerni buscki) - FLORIDA - Collected on silver maple (Acer saccharinum) at Gainesville, Alachua County, on September 15 by L.A. Hetrick. This represents the first fall record of the species. Larvae caused considerable damage to trunk and larger branches of planted silver maple tree on University of Florida campus. Four adults reared from larvae collected on September 15. (Fla. Coop. Sur.).

A LOOPER (Lambdina sp.) - MARYLAND - Larvae caused considerable foliage stripping of hemlocks around Conowingo Lake, Harford County. (U. Md., Ent. Dept.; Oct. 17).

LEPIDOPTEROUS LARVAE - OKLAHOMA - Continue to damage foliage of oaks in many areas of State. (Okla. Coop. Sur.).

CARPENTERWORM (Prionoxystus robiniae) - CALIFORNIA - Heavy on Chinese elms in Merced, Merced County. (Cal. Coop. Rpt.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Damaged limbs continued to be blown from trees in several parts of State. Most damage noted in Dewey, Craig, Adair, Muskogee and McIntosh Counties. (Okla. Coop. Sur.).

LILAC BORER (Podosesia syringae syringae) - OKLAHOMA - Heavy on some lilac at Stillwater. (Okla. Coop. Sur.).

APHIDS - KANSAS - Populations of two unidentified species quite heavy on maple trees in Shawnee and Allen Counties. (Calkins). WISCONSIN - Phenacaspis pinifoliae and Pineus strobi light to moderate on white pine pole timber in Grant County. (Wis. Coop. Sur., Oct. 21). OKLAHOMA - Several species continued common, but decreasing, on a variety of ornamental shrubs and shade trees over State. (Okla. Coop. Sur.). UTAH - Drepanosiphum platanoides less severely infested sycamore at Logan than during 1959; Macrosiphum rosae built up on roses at Brigham City during fall; Aphis knowltoni numerous in Logan Canyon during July and early August, attacking dandelion crowns and roots; Macrosiphum nigromaculosum occasionally infested wild rose in Logan Canyon (det. by J. O. Pepper); A. coweni commonly infesting Veratrum viride in Logan Canyon; Periphyllus lyropictus only moderately numerous on northern area maples this season (Knowlton); and A. kachena common on Castilleja sp. in Laketown during 1959. (Knowlton, Pepper). CALIFORNIA - Populations of Periphyllus negundinis heavy on boxelder in Bueno Park, Orange County. (Cal. Coop. Rpt.).

COCCIDS - MARYLAND - Chrysomphalus obscurus heavy on street and ornamental oaks, locally, in Hyattsville and Baltimore. (U. Md., Ent. Dept.). ALABAMA - Ceroplastes cirripediformis scarce on chinaberry in Auburn, Lee County. Both full-grown and small forms found. These are first specimens taken in Auburn since freeze of 1950. (Guyton). CALIFORNIA - Gossyparia spuria medium on elm in San Diego, San Diego County; and Dactylopius tomentosus heavy on Opuntia cactus in Glamis area of Imperial County. (Cal. Coop. Rpt.).

AZALEA LACE BUG (Stephanitis pyrioides) - ALABAMA - Has been prevalent in Lee County during past few weeks; however, only few taken in past week. (Guyton).

A COREID (Niesthrea sidae) - TEXAS - Light, local infestations on Althaea sp. in Dallas County. This is first record on this host in the State. (Texas Coop. Rpt.).

A MIRID (Neoborus pacificus) - CALIFORNIA - Medium on evergreen ash in Long Beach, Los Angeles County. (Cal. Coop. Rpt.).

A LEAF BEETLE (Blepharida rhois) - OKLAHOMA - Continued heavy on sumac at Stillwater. (Okla. Coop. Sur.).

MITES - UTAH - Discolored Colorado blue spruce about some Provo, Utah County, homes. (Knowlton).

SLUGS - MARYLAND - Deroceras reticulatum injuring orchids at Roland Park and an unspecified species infesting holly at Hyattsville. (U. Md., Ent. Dept.).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - Fifteen new reports of infestation received; 2 from Franklin Parish, 4 from Red River Parish, 1 from La Salle Parish, 1 from Caldwell Parish, 3 from Richland Parish, 3 from Natchitoches Parish and 1 from De Soto Parish. (Spink). TEXAS - Several reports from most sections of State of new infestations in livestock. (Texas Coop. Rpt.). OKLAHOMA - Infestations reported in Dewey, Jefferson, Cotton, Choctaw, McCurtain, McIntosh and Haskell Counties. (Okla. Coop. Sur.).

Current Screw-worm Situation Report - Week Ending October 30, 1960

State	Cumulative Totals - 1960		Counties or Parishes
	Cases	Premises	
Alabama	1	1	Geneva
Arkansas	38	33	Chicot Desha Ashley Crawford Sevier
Louisiana	156	87	Richland Red River Franklin Rapides De Soto Ouachita Natchitoches Caldwell Madison La Salle West Carroll
Mississippi	75	39	Issaquena Sharkey Sunflower Washington Leflore
Totals	270	160	22

Screw-worm Cases Intercepted at Inspection Stations: 1960 - 29 to date.

(Anim. Dis. Erad. Div.)



HORN FLY (Siphona irritans) - OKLAHOMA - Populations declined in Payne County area. Generally light, less than 50 per animal, on range cattle in northwest area. Causing some concern among cattlemen in Dewey, Cotton, Choctaw, McCurtain and Ottawa Counties. (Okla. Coop. Sur.).

HORSE FLIES - OKLAHOMA - Several species continue to annoy livestock in Muskogee and Choctaw Counties. (Okla. Coop. Sur.).

MOSQUITOES - NORTH CAROLINA - Unspecified species keeping people from working in fields except at midday in Columbus County. (Read). CALIFORNIA - Occurrence of Culex tarsalis and other species dropped with advent of cool nights and lower daytime temperatures. Draining of rice paddies in preparation for harvest reduced populations in these areas. Mosquitoes that were of considerable nuisance value during September and early October in Santa Maria, Santa Barbara County, now subsiding. (Cal. Coop. Rpt.).

SIMULIIDS - UTAH - Swarming about faces of deer hunters in many localities of Cache-Richland County mountains. (Knowlton).

HOUSE FLIES - SOUTH DAKOTA - Very numerous in east central and southeast areas of State. (Mast). OKLAHOMA - Musca domestica causing a nuisance in homes throughout State as adults seek protection from cooler temperatures. Populations lower than previous week in Payne County area. (Okla. Coop. Sur.).

WASPS (Polistes spp.) - OKLAHOMA - Causing considerable concern in many parts of State as adults enter major buildings, etc., seeking winter quarters. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Becoming conspicuous in some Millard County herds. (Knowlton).

A BLOODSUCKING CONENOSE (Triatoma protracta) - NEW MEXICO - Members of a number of families bitten in Virden Valley. Several people treated by physicians. (N. M. Coop. Rpt.).

#### BENEFICIAL INSECTS

A PARASITE (Coccophagus flavifrons) - SOUTH CAROLINA - Found in association with Phenacaspis pinifoliae on 28 August. Det. by B. D. Burks. This is a new State record. (Nettles et al.).

CAROLINA MANTIS (Stagmomantis carolina) - NEBRASKA - Has been very active in areas where insects congregating from recent cold weather. (Bergman).

A LADY BEETLE (Chilocorus stigma) - WISCONSIN - Predation heavy on a pine needle scale in Perrot State Park white pines (see CEIR 10(20):386) on October 20. (Wis. Coop. Sur.).

Beneficial Insects in Texas - Nabids, lady beetles, Orius insidiosus and lacewing larvae present in increasing numbers in alfalfa in Reeves County. (Turney).

#### MISCELLANEOUS INSECTS

A LIMACODID (Sisyrosea textula) - SOUTH CAROLINA - Larvae collected at Clemson on 19 September by Dr. J. B. Whitney on glass of car. Det. by H. W. Capps. This is a new State record. (Nettles et al.).

SALT MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Being controlled by the disease Entomophthora aulicae in Coolidge area. (Ariz. Coop. Sur.).

BOXELDER BUG (Leptocoris trivittatus) - NEBRASKA - Continues a nuisance in eastern one-third of State to residences. High populations around homes and farm buildings also in central part of "sandhills". (Bergman). SOUTH DAKOTA - Very numerous in eastern area. (Mast).

A SYRPHID (Monoceromyia tricolor) - FLORIDA - Collected in wet trap at Key West, Monroe County, on October 12, by C. A. Bennett. This is a rarely collected species. (Fla. Coop. Sur.).

CLOVER MITE (Bryobia praetiosa) - UTAH - Moderate numbers entered some Provo and Logan homes. (Knowlton).

A TARSONEMID (Tarsonemus confusus) - IDAHO - Infesting mold cultures in Plant Pathology Research laboratories at University of Idaho, Moscow. (Roberts, Manis).

MILLIPEDES - SOUTH DAKOTA - Very numerous in basements and other sheltered areas in eastern area. (Mast). OKLAHOMA - Entering homes and causing concern to inhabitants in Woods County. (Okla. Coop. Sur.).

#### CORRECTIONS

CEIR 10(39):898 - PINE SAWFLIES - WISCONSIN - Delete part that reads "Needles being webbed prior to pupation" (third sentence).

CEIR 10(44):1035 - WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - Found in Greenville County....

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea	Spodop. exigua
<b>ARKANSAS</b>								
Stuttgart 10/20-26	11			12				42
Morrilton 10/20-26	4			4				30
Fayetteville 10/20-26								18
<b>CALIFORNIA</b>								
Davis 10/19-26	266			271	13		7	1,150
<b>FLORIDA</b>								
Monticello 10/25						2		1
Quincy 10/24	1			5		3		6
<b>INDIANA (Counties)</b>								
Lawrence 10/5,7,11,12	1			1				6
Tiptecanoe 10/14-27	16		1	10				149
<b>KANSAS</b>								
Garden City 10/19-25	134			60	6			225
Hays 10/19-20,23-26	18		3		6			148
Manhattan 10/21-27	8				1			130
Wathena 10/14-18	19			9	4			207
<b>LOUISIANA</b>								
Franklin 10/24,26	2		13	4		7		7
<b>NEBRASKA</b>								
Alliance 10/6-14	38	1		12	3			51
Bushnell 10/7-14	55	1		14	6			73
North Platte 10/13-19	107	18		44	4			34
North Platte 10/20-26	67	2		84	8			101
<b>SOUTH CAROLINA</b>								
Charleston 10/24-30	12	4	5	14		8		3
Clemson 10/22-28	21	3	5	7		1		6
Clemson 10/29-31	12	1		8				
<b>TENNESSEE (Counties)</b>								
Monroe 10/18-24	11			9				5
Mauzy 10/18-24	4	2	1					11
Robertson 10/18-24	8	2		4				40
Cumberland 10/18-24	12		2	5				38
Greene 10/18-24	16		20	8	4			56
Johnson 10/18-24	9	2	18	1	3			11
<b>TEXAS</b>								
Waco 10/22-28	103		23	4	251	116		282

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## A SPECIAL SURVEY OF BOLIVIAN INSECTS

By

J. Alex Munro <sup>1/</sup>

The insects that have been tabulated on the following pages were collected by the writer while he was Research Advisor - Entomology, in the Servicio Agrícola Interamericano, La Paz, Bolivia, during the period from December 1951 to March 1955. The identifications were made by the Insect Identification and Parasite Introduction Research Branch, Entomology Research Division, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C. In most instances, the plant or animal on which the pest was collected is mentioned in connection with the species listed. Beneficial insects are indicated by an asterisk (\*). A brief "Summary of Insect Conditions" and map of Bolivia follow the tabulation.

Order, Family and Species	Locality	Collected from
<u>ANOPLURA</u>		
<u>Haematopinidae</u>		
Haematopinus suis (L.)	Tarabuco; Belen	Pig
Haematopinus asini (L.)	Tarabuco	Burro
<u>Linognathidae</u>		
Linognathus africanus K. & P.	Tarabuco	Sheep
Linognathus stenopsis (Burm.)	Tarija	Goat
<u>COLEOPTERA</u>		
<u>Brentidae</u>		
Brentus anchorago (L.)	Santa Cruz	Sugarcane
<u>Cerambycidae</u>		
Niphonoclea albata (Newm.)	Cochabamba	--
Trichophorus hircus Berg	Cochabamba	Peach
<u>Chrysomelidae</u>		
Coraliomela vicina (Guerin)	Santa Cruz	Potato
Epitrix ubaquensis Harold	Cochabamba	Potato
Omophoita sp.	Santa Cruz	Cotton
Systema sp.	Copacabana	Oca

<sup>1/</sup> Formerly entomologist of the U. S. Operations Mission to the Philippines, 1955-58; Research Advisor - Entomology, Servicio Agrícola Interamericano, La Paz, Bolivia, 1951-55. Prior to entering Foreign Service in 1951, Dr. Munro was Chairman, Department of Entomology, North Dakota Agricultural College at Fargo, North Dakota.

Order, Family and Species	Locality	Collected from
<u>Coccinellidae</u>		
<i>Azya</i> sp.*	Santa Cruz	Citrus
<i>Coccinellina emarginata</i> (Muls.)*	Chulumani	Citrus
<i>Cycloneda sanguinea</i> (L.)*	Santa Cruz	Squash, Cotton
<i>Epilachna paenulata</i> (Germ.)	Cochabamba	Squash
<i>Eriopis sedecimpustulata</i> Latr.*	Santa Cruz	Cotton
<i>Hyperaspis festiva</i> Muls.	Santa Cruz; Belen	Potato
<u>Curculionidae</u>		
<i>Acrotomopus atropunctellus</i> (Boh.)	Santa Cruz	Sugarcane
<i>Brachystylodes pilosus</i> Hust.	Santa Cruz	Avocado
<i>Canephorotomus jelskyi</i> (Kirsch)	Belen	Potato
<i>Conotrachelus</i> sp.	Santa Cruz	Cotton
<i>Heilipus</i> sp. nr. <i>bimaculatus</i> Boh.	Santa Cruz	Sugarcane
<i>Metamasius bilobus</i> (Hust.)	Santa Cruz	Sugarcane
<i>Metamasius hempiterus</i> (L.)	Santa Cruz	Palm
<i>Naupactus</i> sp.	Santa Cruz	Sugarcane
<i>Neobaridia amplitarsis</i> Csy.	Santa Cruz	Rice
<i>Phyrdenus</i> sp. nr. <i>divergens</i> Germ.	Sucre	Tomato
<i>Premnotrypes latithorax</i> (Pierce)	Belen; La Paz	Potato
<i>Rhigopsidius</i> sp. nr. <i>tucumanus</i> Heller	Belen-Tarija	Potato
<i>Sitophilus oryza</i> (L.)	Santa Cruz	Corn
<u>Lyctidae</u>		
<i>Lyctus</i> sp.	La Paz	House
<u>Meloidae</u>		
<i>Epicauta</i> sp.	La Paz	Potato
<i>Epicauta</i> sp. nr. <i>atomaria</i> (Germ.)	Santa Cruz	Legumes
<i>Pseudomeloe</i> sp.	La Paz	Potato
<u>Platypodidae</u>		
<i>Platypus</i> sp. nr. <i>sulcatus</i> Chap.	Chuqui-Chuqui	--

Order, Family and Species	Locality	Collected from
<u>Scarabaeidae</u>		
Ancognatha erythrodera (Blanch.)	Copacabana; Belen	Potato
Aphodius peruanus Er.	--	--
Golofa pelagon Burm.	Cochabamba	Corn
Macroductylus sp.	--	--
Strategus jugurtha Burm.	Santa Cruz	Pineapple
<u>Scolytidae</u>		
Pagiocerus fiorii (Egg.)	Chulumani; La Paz	Corn
Scolytus sp.	Santa Cruz	Cuqui tree
<u>Tenebrionidae</u>		
Pilobalia decorata (Er.)	Cochabamba	--
COLLEMBOLA		
<u>Isotomidae</u>		
Proisotoma sp.	Cochabamba	Water
DERMAPTERA		
<u>Forficulidae</u>		
Doru lineare (Esch.)	Chulumani	Corn
DIPTERA		
<u>Agromyzidae</u>		
Phytomyza sp.	Chulumani	Cauliflower
<u>Bibionidae</u>		
Bibio sp.	Belen	Potato
<u>Bombyliidae</u>		
Anthrax oedipus F.*	Santa Cruz	Cotton
Geron sp.*	Santa Cruz	Sugarcane
<u>Braulidae</u>		
Braula coeca Nitzsch.	Cochabamba	Honey bee

Order, Family and Species	Locality	Collected from
<u>Chloropidae</u>		
Hippelates sp.	Santa Cruz	Sugarcane
<u>Culicidae</u>		
Mansonia sp.	Santa Cruz	--
<u>Drosophilidae</u>		
Drosophila melanogaster Mg.	Cochabamba	Fruits peach
<u>Ephydriidae</u>		
Notiphila sp.	Santa Cruz	Sugarcane
<u>Hippoboscidae</u>		
Hippobosca equina L.	Belen	Horse
Melophagus ovinus (L.)	Tarabuco	Sheep
<u>Tachinidae</u>		
Alpinoplagia boliviana Tns.	Belen	Quinoa
Paratheresia claripalpis (Wulp)*	Santa Cruz	Sugarcane
<u>Lauxaniidae</u>		
Physegenua vittata Macq.	Santa Cruz	Sugarcane
<u>Lonchaeidae</u>		
Carpolonchaea pendula Bezzi	Chulumani	Cherimoya
<u>Milichiidae</u>		
Pholeomyia sp.	Santa Cruz	Sugarcane
<u>Muscidae</u>		
Hylemya cilicrura (Rond.)	Belen	Potato
Limnophora sp.	Santa Cruz	Sugarcane
Musca domestica L.	Belen; Cochabamba	House
Stomoxys calcitrans (L.)	Belen; Santa Cruz	Horse
Siphona exigua (Meig.)	Belen	Cattle
<u>Otitidae</u>		
Euphara sp.	Santa Cruz	Sugarcane
Euxesta annonae (F.)	Santa Cruz	Sugarcane



Order, Family and Species	Locality	Collected from
<u>Sarcophagidae</u>		
<i>Sarcophaga lambens</i> Wied.*	Riberalta	<i>Mocis latipes</i> (Guen.)
<u>Stratiomyidae</u>		
<i>Myxosargus</i> sp.	Santa Cruz	Sugarcane
<u>Syrphidae</u>		
<i>Allograpta exotica</i> (Wied.)*	Santa Cruz	Cotton
<i>Allograpta obliqua</i> (Say)*	Santa Cruz	Cotton
<i>Baccha clavata</i> (F.)*	Santa Cruz	Cotton
<u>Tabanidae</u>		
<i>Stenotabanus furvus</i> (Hine)	--	--
<i>Tabanus claripennis</i> (Bigot)	Santa Cruz	Horse
<i>Tabanus importunus</i> Wied.	Santa Cruz	Horse
<u>Tephritidae</u>		
<i>Anastrepha fraterculus</i> (Wied.)	Santa Cruz	Citrus
<i>Rhagoletis psalida</i> Hendel	Belen	Potato
<u>Tethinidae</u>		
<i>Pelomyia peruviana</i> Mall.	Belen	Quinoa
HEMPITERA		
<u>Belostomatidae</u>		
<i>Lethocerus del-ponteii</i> De Carlo	Chulumani	Water
<u>Coreidae</u>		
<i>Crinocerus sanctus</i> (F.)	Santa Cruz	Kenaf
<i>Leptoglossus zonatus</i> Dallas	Santa Cruz	Kenaf
<u>Lygaeidae</u>		
<i>Lygaeus bicrucis</i> Say	Santa Cruz	Cotton
<i>Nysius</i> sp. (prob. new)	Atchacachi	Beans
<i>Oxycarenus hyalinipennis</i> (Costa)	Chuqui-Chuqui	Cotton

Order, Family and Species	Locality	Collected from
<u>Pentatomidae</u>		
Mecistorhinus tripterus (F.)	Santa Cruz	Papaya
<u>Pyrrhocoridae</u>		
Dysdercus imitator Blote	Santa Cruz	Kenaf
Dysdercus mimus (Say)	Santa Cruz	Cotton
Dysdercus pallidus Blote	Santa Cruz	Cotton
Dysdercus ruficollis (L.)	Santa Cruz	Kenaf
<u>Reduviidae</u>		
Triatoma infestans (Klug)	Cochabamba; Yotala	House
<u>Tingidae</u>		
Pleseobyrsa n. sp.	Chulumani	Avocado
HOMOPTERA		
<u>Aetalionidae</u>		
Aetalion reticulatum (L.)	Chulumani	Citrus
<u>Aleyrodidae</u>		
Aleurothrixus floccosus (Mask.)	Chulumani; Santa Cruz	Citrus
<u>Aphidae</u>		
Anuraphis helichrysi (Kltb.)	Cochabamba	Peach
Aphis spiraeicola Patch	La Paz; Chulumani	Spirea; Citrus
Brevicoryne brassicae (L.)	La Paz	Cabbage
Myzus sp.	Atchachachi	Beans
Toxoptera aurantii (Fonsc.)	Chulumani	Citrus
<u>Cercopidae</u>		
Tomaspis spectabile Dist.	Santa Cruz	Elephant grass
<u>Cicadellidae</u>		
Cuerna centrolineata Melichar	La Paz	Alfalfa
Molomea amblardii (Sign.)	Santa Cruz	Kenaf
Tettigella sp.	Cochabamba	Fruits

Order, Family and Species	Locality	Collected from
<u>Coccidae</u>		
<i>Aspidiotus camelliae</i> Sign.	La Paz	Prune
<i>Adpidiotus palmae</i> Ckll.	Santa Cruz	Palm
<i>Aspidiotus perniciosus</i> Comst.	Chulumani	Jasmine; Apple
<i>Coccus viridis</i> (Green)	Chulumani	Citrus; Jasmine
<i>Diaspis</i> sp. nr. <i>chilensis</i>	La Paz	Peach
<i>Icerya purchasi</i> Mask.	Santa Cruz	Camellia; Citrus
<i>Lepidosaphes beckii</i> (Newm.)	Santa Cruz; Chulumani	Citrus
<i>Lepidosaphes gloverii</i> (Pack.)	Santa Cruz	Citrus
<i>Orthezia praelonga</i> Dougl.	Riberalta	Citrus
<i>Protospulvinaria pyriformis</i> (Ckll.)	Chulumani	Avocado
<i>Selenaspidus articulatus</i> (Morg.)	Santa Cruz; Chulumani	Citrus; Henequen
<i>Trionymus sacchari</i> (Ckll.)	Santa Cruz	--
<u>Membracidae</u>		
<i>Aconophora</i> sp.	Cochabamba	Fruits
<i>Enchenopa</i> sp.	Chulumani	Legume
<i>Stictopelta indeterminata</i> (Wlk.)	Chulumani	Avocado
<u>Psyllidae</u>		
<i>Calophya</i> sp.	Cochabamba	Peppertree
<i>Platycorypha</i> sp.	Cochabamba	Ceiba tree
HYMENOPTERA		
<u>Apidae</u>		
<i>Apis mellifera</i> (L.)*	Cochabamba	Alfalfa
<i>Bombus coccineus</i> Fr.*	Belen	Flowers
<i>Bombus funebris</i> Sm.*	Belen	Flowers
<i>Bombus opifex</i> Sm.*	Belen	Flowers
<i>Trigona hyalinata amazonensis</i> (Ducke)	Chulumani	Tree
<i>Trigona latitarsis</i> Fr.	Santa Cruz	Man

Order, Family and Species	Locality	Collected from
<i>Trigona testaceicornis melanocera</i> Schw.*	Chulumani	Adobe wall
<i>Trigona postica</i> Latr.*	Santa Cruz	--
<u>Bethylidae</u>		
<i>Perisierola</i> sp.*	Santa Cruz	Citrus
<u>Braconidae</u>		
<i>Apanteles</i> sp.*	Chulumani	--
<i>Diaeretus rapae</i> (Curtis)*	La Paz	--
<i>Iphiaulax</i> sp.*	Santa Cruz	<u>Diatraea</u>
<i>Meteorus chilensis</i> Porter*	Belen	--
<i>Phaenocarpa</i> sp.*	Sucre	Potato
<u>Eurytomidae</u>		
<i>Bephrata</i> n. sp.	La Paz	Cherimoya
<u>Formicidae</u>		
<i>Acromyrmex laticeps nigrosetosus</i> (Forel)	Chulumani	Coca
<i>Acromyrmex silvestrii</i> (Em.)	Cochabamba	Garden
<i>Atta saltensis</i> Forel	Cochabamba	Garden
<i>Camponotus rufipes</i> (F.)	Cochabamba	Garden
<i>Camponotus</i> sp. nr. <i>blandus</i> (F. Sm.)	Santa Cruz	Cotton
<i>Solenopsis saevissima</i> (F. Sm.)	Cochabamba	Garden
<i>Solenopsis</i> sp.	Cochabamba	--
<u>Halictidae</u>		
<i>Halictus</i> sp.	Santa Cruz	Man
<u>Ichneumonidae</u>		
<i>Amblyteles</i> sp.*	Belen	--
<i>Dicaelotus</i> sp.*	Belen	--
<i>Diplazon laetatorius</i> (F.)*	Sucre	Potato
<i>Horigenes</i> sp.*	Belen	Quinoa
<i>Ichneumon</i> sp.*	Belen	--

Order, Family and Species	Locality	Collected from
<u>Megachilidae</u>		
Megachile fortuita Mitch.	Belen	Flowers
Megachile grandibarbis Per.	Copacabana	Flowers
<u>Pergidae</u>		
Acordulecera sp.	Sucre	Potato
ISOPTERA		
<u>Rhinotermitidae</u>		
Heterotermes sp. nr. tenuis (Hagen)	Santa Cruz	Sugarcane
<u>Termitidae</u>		
Cornitermes sp.	Santa Cruz	Sugarcane
Nasutitermes globiceps (Holmgren)	Santa Cruz	--
LEPIDOPTERA		
<u>Castniidae</u>		
Castnia sp.	Santa Cruz	Banana
<u>Cosmopterygidae</u>		
Pyroderces sp.	Santa Cruz	Cotton
<u>Crambidae</u>		
Diatraea sp.	Chulumani; Cochabamba	Corn
Diatraea sp. nr. saccharalis (F.)	Santa Cruz	Sugarcane
<u>Gelechiidae</u>		
Gnorimoschema operculella (Zeller)	Belen	Potato
Pectinophora gossypiella (Saund.)	Santa Cruz	Cotton
Sitotroga cerealella (Oliv.)	Cochabamba	Grain
<u>Hyponomeutidae</u>		
Plutella maculipennis (Curtis)	Cochabamba	Crucifers
<u>Lyonetiidae</u>		
Leucoptera coffeella (G. M.)	Chulumani	Coffee
<u>Nymphalidae</u>		
Vanessa carye (Hbn.)	Belen	--

Order, Family and Species	Locality	Collected from
<u>Pieridae</u>		
<i>Colias euxanthe</i> Felder	Chulumani	Legume
<i>Colias flaveola</i> (Blanch.)	Belen	Legume
<i>Leptophobia aripa elodina</i> (Stgr.)	Chulumani	Cauliflower
<i>Phulia</i> sp.	Belen	Legume
<i>Tatochila microdice</i> (Blanch.)	Belen	--
<u>Noctuidae</u>		
<i>Alabama argillacea</i> (Hbn.)	Santa Cruz	Cotton
<i>Copitarsia</i> sp.	Belen	Potato
<i>Laphygma frugiperda</i> (J. E. Sm.)	Santa Cruz	Grass
<i>Mocis latipes</i> (Guen.)	Riberalta	Rice
<i>Pseudaletia unipuncta</i> (Haw.)	Belen	Quinoa; Potato
<u>Psychidae</u>		
<i>Oiketicus</i> sp. nr. <i>kirbyi</i> Guild.	Cochabamba	Garden
ORTHOPTERA		
<u>Acrididae</u>		
<i>Trimerotropis pallidipennis</i> <i>andeana</i> Rehn	Belen	--
<u>Gryllidae</u>		
<i>Acheta</i> sp.	Chulumani	--
SIPHONAPTERA		
<u>Pulicidae</u>		
<i>Ctenocephalides felis</i> (Bouche)	Riberalta	Nutria
<i>Pulex irritans</i> L.	Tarabuco	Pig
THYSANOPTERA		
<u>Thripidae</u>		
<i>Frankliniella</i> sp. nr. <i>tuberosi</i> Mlt.	Belen	Potato
<i>Frankliniella cestrum</i> Mlt.	La Paz	--
<i>Heliethrips haemorrhoidalis</i> (Bouche)	Chulumani	Citrus

Order, Family and Species	Locality	Collected from
<u>ACARINA</u>		
<u>Eriophyidae</u>		
Eriophyes pyri (Pgst.)	Cochabamba	Pear
<u>Ixodidae</u>		
Argas persicus (Oken)	Sacaba	Poultry
Boophilus annulatus microplus (Can.)	Chulumani	Cattle; Horse
Dermacentor nitens Neum.	Santa Cruz	Horse
Otobius megnini (Duges)	Tarabuco	Burro
<u>Tetranychidae</u>		
Bryobia rubrioculus (Sheuten)	Cochabamba	Pear
Tetranychus desertorum Banks	Cochabamba; Tarija	Alfalfa; Potato

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#### Summary of Insect Conditions

Among the pests of major importance in Bolivia, possibly the leaf-cutting ants, *Atta* spp., were the most troublesome, particularly to crops in the lowlands. Cotton, grown mostly in the Santa Cruz area, was subject to serious damage from COTTON LEAFWORM (*Alabama argillacea*), PINK BOLLWORM (*Pectinophora gossypiella*) and various other pests which required control measures. Sugarcane, although subject to the ever present *Diatraea* borers, received most spectacular damage at times from a weevil type of borer, *Metamasius bilobus*. A survey conducted in 1952, a year when *M. bilobus* was particularly troublesome, showed it to have destroyed an average of over 30 percent of the canes throughout the Santa Cruz area. The following year its incidence had dropped to about 5 percent in the same area. The reason for this wide fluctuation was not apparent. Among the insects attacking rice, the larvae of a GRASSWORM (*Mocis latipes*) appeared to cause most damage. This pest caused an estimated 25 percent reduction in rice production in the Riberalta area in 1954. A native PARASITE (*Sarcophaga lambens* Wied.) aided control but not until after crop damage had occurred.

In the high plains of the Andes, ranging up to 13,000 feet or more, where potatoes are grown extensively, a WEEVIL (*Premnotrypes latithorax*) is a perennial pest. Observations made on plantings in the Lake Titacaca vicinity in 1953 showed an average of 34 percent of the tubers to be damaged by these grubs (referred to locally as "Gusano Blanco"). This was apparently fairly typical of the damage caused every year. Usually there were only a few grubs per tuber; but when numerous, larvae completely devoured the contents of the tuber and invaded nearby tubers to continue their feeding or else burrowed into the soil to complete development. Apparently this pest has not spread from the Andean region, which is also the ancestral home of its potato host. One of the most damaging of the livestock pests in the highlands was SHEEP SCAB MITE (*Psoroptes ovis*). Sheep were by far the most abundant of farm animals throughout this area and, although scab mite apparently affected all flocks, there was but slight adoption of control measures. In the mountain

valleys and lowlands, farm animals were affected by a wide range of pests including TICKS, BLOOD-SUCKING FLIES, SCREW-WORMS, LICE, MANGE MITES and HUMAN BOT FLY (*Dermatobia hominis*). The only occurrence of COMMON CATTLE GRUB (*Hypoderma lineatum*) noted was on a recent shipment of cattle from the Northern Hemisphere. The grubs were destroyed.

Appreciation is expressed to the U. S. Department of Agriculture for the identifications received on the material submitted from Bolivia. The identifications were of basic importance in development of pest control measures and aided greatly in building up a reference collection of insects maintained in the Central Experiment Station of Servicio Agrícola Interamericano at Cochabamba. Appreciation is also expressed to Ingenieros Raul Hinojosa, Nestor Suarez and Walter Rodriguez, who assisted in conducting the insect surveys, and to Ing. Elba Alandia, who had charge of the insect collection at the Central Experiment Station.

## BOLIVIA







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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

Severe FALL ARMYWORM infestations greatly reduced by cool weather in Texas. First confirmed report of GREENBUG for this season in Oklahoma. (p. 1075). SPOTTED ALFALFA APHID increasing in Yuma County, Arizona, alfalfa. SWEETCLOVER WEEVIL populations generally much higher in areas of Nebraska than in fall of 1959. (p. 1076).

CITRUS INSECT situation in Florida. (p. 1077).

Current SCREW-WORM situation report. (p. 1079).

INSECT DETECTION: New State records reported were an aphid (Periphyllus salicicorticis) from Utah (p. 1078) and a dipteran (Pterodontia sp.) from Florida (p. 1080). New county records reported were sorghum midge from Madera County, California; in Idaho, meadow spittlebug from Boundary, Bonner, Kootenai and Benewah Counties (p. 1075) and spotted alfalfa aphid from Ada County (p. 1076); and elm leaf beetle from Marshall County, Oklahoma (p. 1078).

SOME HIGHLIGHTS OF INSECT AND MITE OCCURRENCES IN CANADA - 1960. (p. 1082).

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Reports in this issue are for the week ending November 4 unless otherwise indicated.

WEATHER OF THE WEEK ENDING NOVEMBER 7

Temperatures for the week averaged well above normal in the Far Southwest, a few degrees above in the extreme northeast and generally slightly below normal elsewhere. Weekly averages, compared with those of the previous week, were several degrees lower in the midcontinent area. Temperature variations during the week, generally, were within normal limits particularly in the northeastern quarter of the Nation where day-to-day changes were very small. Freezing in the course of the week extended to the northern portions of most of the Southern States. Extreme temperatures ranged from the 90's at some locations along the Mexican border to 3° at Big Piney, Wyoming. Precipitation exceeding one-half inch was limited to the Florida Peninsula, the Appalachian, Great Lakes, and upper Mississippi Valley regions in the east, and western Washington, parts of Wyoming and a wide belt from California to the central Rocky Mountains in the West. Slight to moderate precipitation fell over most of the eastern third of the Nation at the beginning and end of the week and light amounts fell on most states during the remainder of the week from the Great Lakes to the Atlantic coast. Precipitation fell over Washington the first 3 days of the period. A storm system off the California coast produced precipitation over much of the Far Southwest and Great Basin area on 3 days during the latter part of the period. Precipitation was in the form of snow in the higher Cascade and Sierra Nevada Mountain Ranges. In Wyoming, snowfall was general at the beginning and end of the week, with falls totaling 10 inches at Lander, 11 inches at Casper and Wheatland, 13 inches at Medicine Bow. Snow accumulated to one or two inches in north central Kansas on October 30 but melted. Snow flurries were rather frequent from the upper Mississippi Valley to the Atlantic coast and accumulations of one to six inches were reported in northern Minnesota, two to three inches in southeastern Wisconsin, one to four inches in West Virginia and western portions of Pennsylvania and New York State. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - OKLAHOMA - Infestation continued in scattered fields of small grain and alfalfa in central, south central and southwest areas. Counts in infested fields of small grain ranged from 1-2 per linear foot in Bryan County to 0.1-0.2 per linear foot in Kiowa County. Second-instar larvae present in some Stillwater area lawns. (Okla. Coop. Sur.). TEXAS - Severe infestations greatly reduced in many areas due to cool weather. Damage in north and north central areas was severe enough to warrant resewing in many instances. (Texas Coop. Rpt.).

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Medium on Sorghum sp. (milo maize) in Famosa, Shafter and Wasco, Kern County; found for first time in Madera area, Madera County, for a new county record, where infestation is light. (Cal. Coop. Rpt.).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Continues to increase on central area sorghum. Large numbers of winged forms in flight, now a problem in some areas. Not present in Yuma County. (Ariz. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Common in Johnson grass, late grain sorghum, barley, oats and other crops in scattered fields in southeastern and south central areas. (Okla. Coop. Sur.).

SOD WEBWORMS (Crambus spp.) - OREGON - Damaging grass seed fields in Union County. During week of October 17-27, larvae observed spinning overwintering cocoons. (Every).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Heavy on Indiangrass in Henderson County. (McCulley).

GLASSY CUTWORM (Crymodes devastator) - OREGON - Present in Union County grass seed fields, causing localized damage and requiring controls. (Every).

JUNE BEETLES (Cotinis spp.) - VIRGINIA - Larvae of C. nitida causing extensive damage to sod on Drill Mountain on Russell-Buchanan County border (Rowell, Altizer; Oct. 27); common in lawns in section of Fairfax County (Rowell, Hall; Oct. 20); and moderately heavy on lawn in Chatham, Pittsylvania County (Dominick, Oct. 21). Medium to severe throughout city of Newport News; 30 lawns treated for heavy infestations. Grass completely killed in 5 lawns. (Stump, Oct. 20). NORTH CAROLINA - C. nitida injuring lawns in Haywood County. (McCall, Farrier). CALIFORNIA - Heavy populations of C. texana larvae in soil in Vista, San Diego County. (Cal. Coop. Rpt.).

MEADOW SPITTLEBUG (Philaenus leucophthalmus) - IDAHO - Early summer surveys indicated this species now widely distributed in Boundary, Bonner, Kootenai and Benewah Counties. These are new county records. (Gittins).

GRASSHOPPERS - UTAH - Egg survey of Snowville, Blue Creek and Hansel Valley areas of Box Elder County showed outlook to be severe to very severe on soil bank lands. This corresponds with adult survey in early August. (Thornley, Arrand). Counts still 1-2 per square yard in some Cache County mountains after repeated frosts. (Knowlton). OKLAHOMA - Several species causing scattered marginal damage to fields of small grain and alfalfa in Caddo, Comanche, Atoka and Mayes Counties. (Okla. Coop. Sur.). TEXAS - Several species causing light damage to marginal areas of fields of small grains in panhandle, south plains and north central areas, but still mostly confined to green pastures and other foliage. (Texas Coop. Rpt.).

GREENBUG (Toxoptera graminum) - OKLAHOMA - First confirmed report of this fall collected October 27 in field of oats in Durant area, Bryan County; averaged 0.25 per linear foot of row. None noted in other fields checked in State. (Okla. Coop. Sur.). TEXAS - Survey made November 1-3 in north central area failed to detect presence of this species in fields checked. (Newton). UTAH - Rarely encountered this year. (Knowlton).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Light, 1-1.5 per linear foot, in fields of small grain in Bryan County area. (Okla. Coop. Sur.).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Severe, local infestation of larvae attacking barley seedlings at Chatham, Pittsylvania County; damage heavy in spots. (Blair, Oct. 28).

SPOTTED ALFALFA APHID (Therioaphis maculata) - IDAHO - Found 3½ miles northeast of Meridian, Ada County; this is a new county record. (Waters). NEBRASKA - Population heavy in a field in Greeley County; approximately 225 per sweep. (Bergman). OKLAHOMA - Extremely light (0.1 per sweep) in alfalfa checked in Choctaw County; causing localized damage in Kingfisher County; and widespread in alfalfa in Pawnee County. (Okla. Coop. Sur.). ARIZONA - Infestations increasing in Yuma County alfalfa, with heavy populations in some fields, especially on Yuma Mesa. Populations declining in central area of State. (Ariz. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - DELAWARE - Averaged 2-5 per sweep in alfalfa throughout State. (Burbutis, Mason). MARYLAND - Averaged 38 per sweep in alfalfa at Fairland, Montgomery County. (U. Md., Ent. Dept.). OKLAHOMA - Present in limited numbers (0.2 per sweep) in Choctaw County alfalfa checked. (Okla. Coop. Sur.). SOUTH DAKOTA - Large numbers of adults found on alfalfa in southeast section. (Mast).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults averaged 3 per 10 sweeps in alfalfa over State. (Burbutis, Mason). VIRGINIA - Spotted, medium infestation on August-seeded alfalfa at Gate City, Scott County. (Moore, Oct. 13). OKLAHOMA - Medium to heavy (2-4 per sweep) in alfalfa surveyed in Choctaw County. (Okla. Coop. Sur.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults decreased slightly in New Castle and Kent County alfalfa, and increased in Sussex County, with 4 per 10 sweeps. (Burbutis, Mason).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NEBRASKA - Averaged 36 per 100 sweeps in 2 fields examined in Cass County, 86 per 50 sweeps in a Lancaster County field and 400-500 per 100 sweeps in a field in Saunders County. Generally, populations are much higher than in fall of 1959. (Bergman).

ALFALFA WEEVIL (Hypera postica) - DELAWARE - Adults present in most fields of alfalfa throughout State. Larvae present in New Castle and Kent Counties, with 15 per 10 sweeps in one New Castle County field. (Burbutis, Mason).

A LEAFHOPPER (Empoasca sp.) - ARIZONA - Very heavy in Yuma County alfalfa. General purplish to yellowish color of alfalfa apparently associated with high populations. (Ariz. Coop. Sur.).

#### FRUIT INSECTS

ORIENTAL FRUIT MOTH (Grapholitha molesta) - OREGON - Survey completed for 1960. Adult moths trapped from May 9 to October 10. Although all fruit-growing areas of State were included in trapping program, moths were found only in Salem area; 12 properties were infested, with a total of 119 moths collected. (Larson). TEXAS - Heavy, late twig damage on young peach trees in Upshur County. Inspection of 25 injured twigs revealed only 3 last-instar larvae, indicating overwintering has begun. (Garner).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Sapote fruits from proximity of City Park in Anaheim, which have been in holding trays since end of September, were negative for this species. To date, 38,294 trap inspections and 32,409 fruit examinations have been made, with no additional flies taken. Total adults taken remain at 3 - 2 in Anaheim, 1 in Carpinteria. Search for larvae has been negative. Trapping now extended to include Channel Islands. (Cal. Coop. Rpt.).



GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Large numbers migrating to peach, nectarine, cherry and apricot trees in Las Cruces area, Dona Ana County. (N. M. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - WASHINGTON - T. telarius and T. mcDanieli causing severe webbing on entire trees from trunk to twigs in peach orchards at Rock Island, Douglas County. (Anthon, Oct. 19).

Citrus Insect Situation in Florida - End of October - PURPLE SCALE (Lepidosaphes beckii) infested 59 percent of groves checked. Activity decreased and will hold at current low level. Populations will be low in all districts during November. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 70 percent of groves. Activity increased and will continue in high range during November. High percentage of scales will be in young stages for next 3 weeks. Populations expected to be high through November in most districts. High activity present in upper east coast, Indian River and west coast districts; Ridge district is above average. CITRUS RED MITE (Panonychus citri) infested 43 percent of groves. Although activity is still below average, it has taken an upward trend which is expected to continue until December. Activity and populations currently in low range in all districts, but economic infestations will become more numerous during next month. CITRUS RUST MITE (Phyllocoptruta oleivora) infested 75 percent of groves. The recent upward trend in activity brought all districts into high range. Activity will remain high through November. Although population for State is presently near average, considerable increase is anticipated, with majority of groves developing destructive infestations during coming month. Activity is high in all districts, being highest in west coast, Gainesville, upper east coast, Ridge and Bartow. CHAFF SCALE (Parlatoria pergandii) is much above normal abundance and is increasing. TEXAS CITRUS MITE (Eutetranychus banksi) still generally low, but becoming more prevalent. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

A TWIG GIRDLER - GEORGIA - Undetermined species causing light damage to pecan limbs in Thomas County. (Miller, Oct. 11).

GRAPE LEAF SKELETONIZER (Harrisina americana) - GEORGIA - Moderate infestation on grapes in Taylor County. (Reddish, Oct. 17).

#### TRUCK CROP INSECTS

IMPORTED CABBAGEWORM (Pieris rapae) - DELAWARE - Larvae common and causing moderate feeding injury to turnips, broccoli and cabbage in Kent County. (Burbutis, Mason).

CABBAGE LOOPER (Trichoplusia ni) - GEORGIA - Moderate on fall cabbage in Colquitt County. (Johnson). ARIZONA - Egg counts average 8 per plant in Yuma County lettuce. Control of larvae has been very successful. (Ariz. Coop. Sur.).

A LOOPER (Pseudoplusia includens) - CALIFORNIA - Medium infestation in some tomato plantings in San Diego, San Diego County. (Cal. Coop. Rpt.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - LOUISIANA - Survey of cabbage-growing area near Thibodeaux, Lafourche Parish, showed more than 50 percent of fields examined infested. Considerable damage being done to seedling cabbage plants; growers have replanted a second time in many cases. (Spink).

APHIDS - NEW MEXICO - Heavy, late buildup of unspecified species on carrots and turnips in Dona Ana County gardens. (N. M. Coop. Rpt.). OKLAHOMA - Rhopalosiphum pseudobrassicae heavy on turnips in Atoka County. (Okla. Coop. Sur.). DELAWARE - Numbers of Myzus persicae increasing on Sussex County spinach and on turnips, broccoli and cabbage in Kent County; feeding injury light to all infested crops. (Burbutis, Mason).

BEEF LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Application of control to 152,698 acres of rangeland completed in late October. Mortality counts show 97.7-98.8 percent kill in San Joaquin Valley foothills area. (Cal. Coop. Rpt.).

A LEAF MINER - SOUTH CAROLINA - An undetermined species causing great concern in tomatoes in Charleston and Beaufort Counties. (Nettles et al.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults fairly common on spinach in Sussex County; present on beets in Kent County and carrots in New Castle County. Causing light injury to all infested crops. (Burbutis, Mason).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - VIRGINIA - Common on Virginia pine in some areas of Fairfax County. Many calls received concerning the problem. (Tarpley, Beard; Oct. 28). TEXAS - Heavy on young pines in Camp County. (Garner).

PINE WEBWORM (Tetralopha robustella) - VIRGINIA - Medium on several varieties of pine at Martinsville, Henry County. (Amos, Tarpley, Cofer).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - GEORGIA - General and moderate in Athens, Clarke County, wherever construction is underway. (Jordan).

WHITE-PINE APHID (Cinara strobi) - MARYLAND - Winged females and eggs abundant on white pine at College Park, Prince Georges County. (U. Md., Ent. Dept.).

A WHITE-PINE SAWFLY (Neodiprion sp.) - VIRGINIA - Common on white pine at Apenhill Farm, Middleburg, Loudoun County. (Tarpley, Oct. 20). Attacking 2 white pines on lawn of residence on outskirts of Orange, Orange County. Det. by C. L. Morris. (Shepherd, Oct. 18).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Medium infestation noted on an elm at Madill, Marshall County; this is a new county record. Adults entering homes in Stillwater area. (Okla. Coop. Sur.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continued damaging to a wide variety of trees in eastern third of State. (Okla. Coop. Sur.).

APHIDS - OKLAHOMA - Several species heavy on maples in east central area; light to medium infestations widespread on variety of shrubs and ornamentals over most of State. (Okla. Coop. Sur.). UTAH - Periphyllus salicicorticis infesting willows below ground surface in Cottonwood Canyon. (Smith, Knowlton). According to ARS records, this is a new State record. CALIFORNIA - Aphis nerii heavy on milkweed in Pine Valley, San Diego County. (Cal. Coop. Rpt.).

COCCIDS - CALIFORNIA - In San Diego County, Pseudococcus maritimus occurred as a medium infestation on gladiolus in National City; Parlatoria pittospori and Coccus elongatus were medium on acacia and Fiorinia fioriniae was medium to heavy on Melaleuca sp. in San Diego. Chrysomphalus rossi was heavy on Araucaria sp. in San Diego. Puto sp., probably cupressi, was heavy on an old Sequoia sempervirens in Guerneville, Sonoma County. (Cal. Coop. Rpt.). NORTH CAROLINA - Ceroplastes sp. infesting Camellia japonica, with 2 per inch of stem, and Fiorinia theae infesting leaves of same host in Johnston County. (Kelman, Farrier). Unaspis euonymi infesting euonymus in Burke and Johnston Counties. (Jones, Partin, Farrier).

A GROUND PEARL - CALIFORNIA - Margarodes sp., probably meridionalis, heavy on Zoysia grass in Brawley, Imperial County. (Cal. Coop. Rpt.).

A HACKBERRY PSYLLID (*Pachypsylla* sp.) - CALIFORNIA - *Pachypsylla* sp., near *celtidis-vesicula*, adults and nymphs heavy on *Celtis* sp. in Fresno, Fresno County. (Cal. Coop. Rpt.).

MITES - WYOMING - Several species infesting greenhouses and causing some damage to ornamentals and cereals in Laramie and Cheyenne. (Fullerton).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (*Callitroga hominivorax*) - LOUISIANA - Eleven new infestations reported as follows, by parish: Franklin - 5; Richland - 4; West Carroll - 1; Red River - 1. (Spink). OKLAHOMA - Cases reported from Okfuskee, Le Flore, Choctaw and Comanche Counties. (Okla. Coop. Sur.). TEXAS - Several new cases reported in Callahan and Brown County livestock. (Newton).

Current Screw-worm Situation Report - Week Ending November 6, 1960

State	Cumulative Totals - 1960		Counties or Parishes
	Cases	Premises	
Alabama	1	1	Geneva
Arkansas	43	36	Chicot Desha Ashley Crawford Sevier
Louisiana	174	98	Richland Red River Franklin Rapides De Soto Ouachita Natchitoches Caldwell Madison West Carroll Tensas Catahoula La Salle
Mississippi	94	49	Issaquena Sharkey Sunflower Washington Leflore Warren
Florida	1	1	Hillsborough
Totals	313	185	26

Screw-worm Cases Intercepted at Inspection Stations: 1960 - 29 to date.

(Anim. Dis. Erad. Div.)

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CATTLE GRUBS (*Hypoderma* spp.) - OKLAHOMA - *H. lineatum* beginning to appear in backs of cattle in Payne, Noble and Osage Counties. (Okla. Coop. Sur.). NEW MEXICO - Larvae of *Hypoderma* sp. appearing in backs of cattle in Eddy County. (N. M. Coop. Rpt.).

A SARCOPHAGID (Wohlfahrtia opaca) - IDAHO - In mid-September, a number of small dipterous larvae were removed from small, localized subdermal pustules in skin of a 12-day-old baby. Pustules were located on cartilage and lobes of ears, face, both sides of point of chin, both sides of back of waist and on both wrists. Each pustule contained several larvae. Det. by Dr. Albert W. Grundmann. In 1949, this same species was found infesting rabbits and dogs in the Wendell area, Gooding County. (Valcarce).

HOUSE FLIES - OKLAHOMA - Musca domestica continues annoying in Payne, Okfuskee and Comanche Counties as adults seek shelter in homes and other major buildings. Common to heavy around some barns and livestock pens in east central area. (Okla. Coop. Sur.). NEW MEXICO - Considerable buildup of undetermined species around poultry houses at Albuquerque, Bernalillo County. (N. M. Coop. Rpt.).

FACE FLY (Musca autumnalis) - NORTH DAKOTA - Surveys at Edgeley, La Moure County, and at Linton, Emmons County, were negative. (N. D. Ins. Sur.).

HORN FLY (Siphona irritans) - OKLAHOMA - Light numbers, up to 100 per head on range cows, continue in east central area. Causing some concern in Delaware, Pawnee, Kingfisher, Garvin, Comanche and Atoka Counties. (Okla. Coop. Sur.).

LICE - OKLAHOMA - Medium infestation of Linognathus vituli noted on some cattle in Woodward area, Woodward County. Haematopinus suis infesting hogs locally in Stephens County. Unidentified species infesting some cattle in Muskogee County; none noted on cattle checked in other east central sections. (Okla. Coop. Sur.). NEW MEXICO - Light infestations of H. eurysternus on cattle in Rio Arriba County. (N. M. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - SOUTH CAROLINA - As many complaints of stings to individuals from this species reported this season as have been reported in the last 25 years combined. (Nettles et al.).

WASPS - TEXAS - Several species causing a nuisance in and around homes in many areas of State. (Newton). OKLAHOMA - Undetermined species annoying to residents as adults seek shelter in buildings in Comanche County. (Okla. Coop. Sur.).

#### MISCELLANEOUS INSECTS

AN ACRO CERID (Pterodontia sp.) - FLORIDA - This dipteran, probably a new species, collected in Alachua County October 5 by J. T. Creighton. So far as is known, this is the first record of the genus from the State, although 2 species occur rather widespread east of the Rocky Mountains. Det. by E. I. Schlinger. (Fla. Coop. Sur.).

BOXELDER BUG (Leptocoris trivittatus) - WYOMING - Very numerous around homes in Cheyenne. Heavy adult populations becoming a problem. (Stanford). NEW MEXICO - A nuisance in and around homes in many areas of State. (N. M. Coop. Rpt.).

BROWN-BANDED ROACH (Supella supellectilium) - NORTH DAKOTA - Home infestation reported in Towner County. (N. D. Ins. Sur.). UTAH - Severe infestation in a home at Ogden, Weber County. (Knowlton).

A NOCTUID (Simyra henrici) - NEW MEXICO - Larvae very abundant on cattail; have stripped leaves in several areas of Bosque del Apache Wildlife Game Refuge in Socorro County. (N. M. Coop. Rpt.).

A SUBTERRANEAN TERMITES (Reticulitermes sp.) - WYOMING - Infesting timbers in a house in Cody, Park County. (Fullerton).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
<b>ARKANSAS</b>							
Hope 10/27-11/2	78			36			29
Morrilton 10/27-11/2	3			5			19
Fayetteville 10/27-11/2	8			4			16
<b>FLORIDA</b>							
Monticello 11/1			1	1			
<b>LOUISIANA</b>							
Franklin 10/31				2			
Baton Rouge 10/28-11/3	9	19	1		3	5	7
<b>NEBRASKA</b>							
Bushnell 10/16-18	4			1			1
North Platte 10/27,11/1	6			16	1		8
<b>TENNESSEE (Counties)</b>							
Madison 10/25-31	2						
Maury 10/25-31	22				2		8
Robertson 10/25-31	12		2	5	2		25
Cumberland 10/25-31	30			44	1		4
Greene 10/25-31	25	2	3	8	1		5
Blount 10/25-31	21	1	3	10			
<b>TEXAS</b>							
*Brownsville 10/22-28	158	867	5	34		18	8
Waco 10/29-11/4	22				73	27	40

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\* Five traps - Brownsville

Some Highlights of Insect and Mite Occurrences in Canada

1960

Prepared by C. Graham MacNay

After a prolonged, widespread outbreak of GRASSHOPPERS in western Canada during the period 1945 to 1950, populations reached a remarkably low ebb, especially in the Prairie Provinces, in 1952 and 1953. By 1954, however, they had begun to increase again in Manitoba; by 1956, numbers were increasing in Saskatchewan; and by 1957 both Alberta and British Columbia reported increases. This trend continued in Alberta and Saskatchewan, but in British Columbia and Manitoba some decrease was noted in 1959. In 1960, an impressive, continued increase in numbers occurred throughout much of the agricultural area of the Prairie Provinces susceptible to outbreaks. CLEAR-WINGED GRASSHOPPER (Camula pellucida) was the predominant pest species in most areas, MIGRATORY GRASSHOPPER (Melanoplus bilituratus) and TWO-STRIPED GRASSHOPPER (Melanoplus bivittatus) playing less important roles. Grassland damage in Alberta was 60 percent greater than in 1959 and the most severe in ten years. Most affected was the area between Lethbridge and the foothills, and areas east of Calgary and at Coronation. In Saskatchewan, the grasshoppers, as a result of hot, dry weather, moved into flax and grain, causing considerable head clipping of the latter. In Manitoba, concentrations were greatest in the Red River Valley and the south-western part of the Province, where they damaged pastures, alfalfa and the margins of field crops. In Ontario, populations were at a low ebb, but in Quebec they were larger than in recent years.

In British Columbia, RED-BACKED CUTWORM (Euxoa ochrogaster) occurred in scattered infestations, feeding to some extent on alfalfa, sweetclover and weeds but causing most damage to garden vegetables and flowers. GLASSY CUTWORM (Crymodes devastator) damaged seed crops of Merion bluegrass at Dawson Creek, the first record of this species in the area, and SPOTTED CUTWORM (Amathes c-nigrum) was identified for the first time as having been the cause in recent years of damage in some orchards, mainly to the buds of small trees, in the southern Okanagan. In southern areas of Alberta and in southwestern Saskatchewan, where extremely dry conditions were experienced in May and June, there was a considerable increase in damage by PALE WESTERN CUTWORM (Agrotis orthogonia) and large populations are predicted for 1961. RED-BACKED CUTWORM was less numerous than in 1958 and 1959 in both provinces. In southern Alberta, the BERTHA ARMYWORM (Mamestra configurata) was reported for the first time in ten years. In Manitoba, reports of CUTWORMS were received from widely scattered areas. Losses were generally light, but some severe damage occurred near Mineota and Morden. Damage was largely restricted to garden crops, legumes, corn, beets, and flax. In southwestern Ontario, CUTWORMS caused considerable injury to sugar beets and onions, and in all of southern Ontario garden crops, generally, were extensively damaged. In southeastern Quebec, CUTWORMS were reported to be normally abundant; but in some southwestern areas, infestations were the heaviest in several years, some crops of celery, lettuce, and onions being destroyed. In the Atlantic Provinces, generally, damage was reported to be moderate, but in Kent County, New Brunswick, BLACK ARMY CUTWORM (Actebia fennica) occurred in a local outbreak on blueberries.

In southern Alberta, BEET WEBWORM (Loxostege sticticalis) was less numerous than in 1958 and 1959, but RED TURNIP BEETLE (Entomoscelis americana) and DIAMONDBACK MOTH (Plutella maculipennis) severely damaged rape seed. In Saskatchewan, a heavy infestation of BEET WEBWORM combined with a lighter infestation of DIAMONDBACK MOTH to either destroy or seriously damage many fields of rape in a triangular area formed by Prince Albert, Yorkton, and Hudson Bay. Several thousand acres were sprayed a second time. In Manitoba, flax, vegetables, sugar beets, and potatoes were attacked by BEET WEBWORM larvae migrating from cereal crops and weeds, and DIAMONDBACK MOTH was generally a serious pest of rape.

CORN LEAF APHID (*Rhopalosiphum maidis*) was a common pest of grain, especially late barley, from the Peace River, British Columbia, area eastward to Nova Scotia. Very large populations built up in some areas, especially in the West; some spraying was done in the Regina, Saskatchewan, area and in Nova Scotia, but in most areas the infestation was reduced by natural controls and damage was comparatively light. However, yellow dwarf, spread by this and other grain aphids, was common in New Brunswick.

WIREWORMS were commonly reported in vegetable and field crops, but no extensive damage was indicated. A survey of some 300 fields in the Annapolis Valley, Nova Scotia, revealed that two-thirds had wireworm populations in excess of one larva per square foot. Infestation was greater under continuous sod and lessened with cultivation.

In southern Alberta, ALFALFA WEEVIL (*Hypera postica*) continued to increase in all irrigated areas, and in the Milk River Valley, where it first became established, counts ranged up to 400 per net sweep.

In Ontario, an introduced EUROPEAN SKIPPER (*Adoepa lineola*) had spread from Grey County southward along Lake Huron, causing up to 100 percent loss of timothy in localized areas; and EUROPEAN CHAFER (*Amphimallon majalis*) was collected for the first time in Canada, at Niagara Falls.

In Newfoundland, a LEAF TIER (*Cnephasia virgaureana*) severely damaged cabbage transplants, strawberry, and garden flowers, and fed indifferently on clover and alfalfa.

Garden crops, as usual, were attacked by many insects, although in Saskatchewan, excepting DIAMONDBACK MOTH, pests were at the lowest population level in ten years. SIX-SPOTTED LEAFHOPPER (*Macrostelus fascifrons*), frequently of major economic importance in many crops, occurred in below-average numbers in all provinces except in Nova Scotia, where aster yellows caused the greatest damage in 18 years to susceptible vegetables and flowers, and in Prince Edward Island, where it was very numerous, especially on potatoes. Other pests of more than usual importance included: APHIDS, FLEA BEETLES, and LEAFHOPPERS on many hosts, especially potatoes, in Eastern Canada; SEED-CORN MAGGOT (*Hylemya antiqua*) on tobacco, corn, and beans in Ontario; HORNWORMS (*Protoparce sexta* and *P. quinquemaculata*) on tobacco and tomato in Ontario; CELERYWORM (*Papilio polyxenes asterius*) on carrot, parsley, and dill in many areas of Eastern Canada; DIAMONDBACK MOTH in an outbreak on the prairies and generally abundant from coast to coast; FIELD CRICKETS in Manitoba, abundant and heavily parasitized by mermithids which, on leaving the host, were very objectionable in buildings and caused the closing of a swimming pool at Winnipeg; CORN EARWORM (*Heliothis zea*) most numerous since 1947 in New Brunswick; EUROPEAN CORN BORER (*Pyrausta nubilalis*) in the largest numbers in several years in southwestern Ontario; MEXICAN BEAN BEETLE (*Epilachna varivestis*) in increased numbers on white beans in south Huron and Lambton Counties in Ontario; SLUGS very numerous on many crops in early summer in Ontario; and BROWN WHEAT MITE (*Petrobia latens*) quite injurious to onions at Kelowna, British Columbia. The recently introduced GARDEN SYMPHYLID (*Scutigerella immaculata*) was found in the Keating, British Columbia, area; BUCKTHORN APHID (*Aphis nasturtii*) comprised 80 percent of the aphid population on potatoes at Fredericton, New Brunswick; and in Manitoba, parasitism of COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) by *Doryphorophaga doryphorae* was calculated to reach 70 percent in some seasons.

Fruit insects of major importance included: PEAR PSYLLA (*Psylla pyricola*) top problem in the Okanagan Valley, British Columbia; ROSY APPLE APHID (*Anuraphis roseus*), EUROPEAN RED MITE (*Panonychus ulmi*) and *Tetranychus medanielli* also in this area; EUROPEAN RED MITE in the most severe infestation in 20 years on pear, peach, and plum in the Niagara Peninsula, Ontario, and numerous in southern Quebec; ORIENTAL FRUIT MOTH (*Grapholitha molesta*) and PLUM CURCULIO (*Conotrachelus nenuphar*) in the Niagara Peninsula; FRUIT TREE LEAF ROLLER (*Archips argyrospilus*),

PEAR LEAF BLISTER MITE (Eriophyes pyri) and EYE-SPOTTED BUD MOTH (Spilonota ocellana) in Quebec; WINTER MOTH (Operophtera brumata), CANKERWORMS and APHIDS in Nova Scotia; TENT CATERPILLARS (Malacosoma spp.) increasing from the recent low ebb in most areas of Eastern Canada; and in New Brunswick, THRIPS injury to blueberry, formerly attributed entirely to Frankliniella vaccinii, was found to be caused partly by Taeniothrips vaccinophilus.

Reports of miscellaneous pests revealed the absence of the HOUSE FLY (Musca domestica) in the Skeena Valley, British Columbia; establishment in Western Canada of a DERMESTID (Trogoderma parabile), a potentially serious pest of stored grain; establishment in Alberta, at Lethbridge, of EUROPEAN EARWIG (Forficula auricularia); and the occurrence in Nova Scotia, at Deep Brook, of a CARPET BEETLE (Attagenus pelli), previously recorded in Canada only in this province in 1871 and 1902.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

Limited numbers of GREENBUG found in several Oklahoma counties and counts averaged 30 per foot of row in small grains in some fields in Potter, Oldham and Deaf Smith Counties, Texas, during period October 26 - November 7. HESSIAN FLY surveys reported in Kansas and Illinois. Infestations ranged 8-52 percent in Kansas and puparia or larvae per 100 fall-seeded wheat stems ranged 0-39.6 in east-southeast, Illinois. (p. 1087). WHEAT CURL MITE survey in Kansas reported. Degree of infestation ranged from trace to heavy. (p. 1088).

SPOTTED ALFALFA APHID infesting alfalfa in area of Jackson County, Oregon; first infestation in county and in southern part of State. (p. 1088).

BEE T ARMYWORM severe on sugar beets in Imperial County, California; large blocks of seedling beets destroyed. (p. 1089).

Three PINK BOLLWORM larvae collected in gin trash in Maricopa, Pinal and Pima Counties area. (p. 1090).

Current SCREW-WORM situation report. One case reported in Hillsborough County, Florida. (p. 1091).

CORRECTIONS (p. 1093).

INSECT DETECTION: European earwig collected in Lackawanna County, Pennsylvania, for first time. (p. 1092).

INSECTS not known to occur in the United States. (p. 1095).

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Reports in this issue are for week ending November 11, unless otherwise indicated.

WEATHER OF THE WEEK ENDING NOVEMBER 7

Temperatures for the week averaged near normal in the Far West and below normal in virtually all areas east of the Rocky Mountains. Precipitation occurred on 4 or 5 days in parts of the Pacific Northwest and on 2 days in most of the remainder of the Nation. In most areas, temperatures fell to the lowest levels of the season to date, with freezing penetrating deep into southern areas, and in the northern half of the Nation light snowfall was rather widespread with spotty accumulations of a few inches. Over the weekend, the weather was mostly fair and sunny with rising temperatures from the Rocky Mountains to the Atlantic coast.

In the Eastern States, temperatures were lowest on the 7th and 8th as a cold air mass moved across the area from the midcontinent region. For the first time this season, minimum temperatures fell to subfreezing levels at most coastal stations from southern New England to South Carolina, and scattered light frost was reported in northern and northwestern interior sections of Florida. In the northeastern interior, minima fell into the teens, with 10° at Putnam, Connecticut, and West Cummington, Massachusetts, the lowest reported.

The lowest temperatures in the midcontinent area occurred when a cold air mass moved over that area on the 9th, 10th, and 11th. Beach, North Dakota, reported a low of -3°, and freezing extended to central portions of Texas and Alabama. A low of -8° was recorded at Fox, Wyoming, and subzero minima also occurred in some higher mountain valleys in Colorado.

Precipitation totals were very light in southeastern coastal areas, the midcontinent, and Rocky Mountain regions. In a belt extending northeastward from southern Texas and including the Ohio Valley and Appalachians, totals ranged from 1/2 to over 1 inch. Totals for the week also exceeded 1/2 inch in the Pacific Northwest and central and northern California, with more than 2 inches on the western slopes of the Sierra Nevada Mountains and along the coast north of San Francisco.

Substantial snow fell in the mountains of Idaho, and 1-to 8-inch falls were reported in the Colorado Rockies. In the Great Plains, snowfall was quite general as far south as Kansas on the 8th and 9th, when 2 to 3 inches were reported at some western stations in that State. Many stations in northern and western Missouri reported their first snowfall of the season. On the 11th, snow accumulated to 4 inches at Marquette and Calumet, Michigan. At the end of the period, however, the snow cover, mostly 1 to 2 inches, east of the Rockies was limited to northern portions of North Dakota, Minnesota, Michigan, and spots in upper New England. Shallow lakes are beginning to freeze over in northern Minnesota. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - OKLAHOMA - Light in small grain over widely scattered areas. Reports of infestations continue to decrease as cool temperatures become more common. (Okla. Coop. Sur.). TEXAS - Resowing of small grains continues in some areas. Infestations rapidly disappearing with advent of freezing weather in northern half of State. (Newton). LOUISIANA - Heavy infestations damaging fall-seeded plots in Madison Parish; controls being applied. (Spink). CALIFORNIA - Heavy on corn plantings in Winterhaven, Imperial County. (Cal. Coop. Rpt.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - NEW MEXICO - All specimens collected from corn, broomcorn and grain sorghums during European corn borer survey in October, determined as this species. Damage heavy in fields of corn along east side of State. (N. M. Coop. Rpt.).

SMARTWEED BORER (Pyrausta ninsliei) - VIRGINIA - Single specimen collected in cornstalk in Greensville County. (Tarpley, Oct. 21).

CORN ROOTWORMS (Diabrotica spp.) - KENTUCKY - Adults (95 percent D. longicornis, 5 percent D. undecimpunctata howardi) observed feeding on silks of ears in fields of corn in Ohio River bottom lands near Geneva, Henderson County, on August 17; adults averaged 5 (ranged 1-12) per ear. Damage was computed to be approximately 20 percent of the crop in same fields, October 13, by examination of random ears. Ears with more than half of kernels missing because of presumed poor pollination resulting from adult feeding on silk, not uncommon. (Flake, Townsend).

WHITE GRUBS - OKLAHOMA - An unidentified species causing damage to some fields of wheat in localized areas of Canadian County. (Okla. Coop. Sur.). TEXAS - Light to moderate infestations of Phyllophaga spp. in fields of small grain in Uvalde and Donley Counties. (Gallman, Breedlove).

Small Grain Aphids in Oklahoma - Several species common in many fields throughout State. Very limited numbers of Toxoptera graminum found in several fields in Bryan, Mayes, Rogers, Wagoner, Tulsa, Creek, Payne, Oklahoma, Kingfisher, Garfield and Alfalfa Counties; averaged less than 1 per linear foot of drill row in most fields, but 15 and 48 per linear foot in 2 fields in Hennessey area, Kingfisher County. Rhopalosiphum maidis most common species in all areas; particularly common in barley. Macrosiphum granarium, R. fitchii and Sipha flava also present. (Okla. Coop. Sur.).

GREENBUG (Toxoptera graminum) - TEXAS - Survey conducted during period October 26 to November 7 in 25 panhandle counties revealed presence of this species in 22 counties. Averaged 30 per foot of row in some fields in Potter, Oldham and Deaf Smith Counties. Generally, populations in other areas ranged 1-10 per foot of row and were less numerous in eastern part of panhandle area. (Daniels).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Populations continue very heavy on sorghum in central area of State. (Ariz. Coop. Sur.).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Surveys conducted October 24-25 showed plant infestations ranged 8-52 percent in Finney, Ness, Barton, Ellsworth, Saline, Marion and Geary Counties; 3 fields in Rush County ranged 40-88 percent of plants infested. (Jones, Somsen). ILLINOIS - Survey of fall-seeded wheat conducted in 5 east-southeast counties; 10 fields randomly checked in each county. Results, in terms of puparia or larvae per 100 stems, by county, were as follows: Clark - 0.8; Jasper - 6.4; Shelby - 0; Lawrence - 2.8; Marion - 39.6. This probably reflects fact that on east side of section, although plenty of wheat was seeded early, conditions so dry that germination probably did not occur until recommended seeding date; rainfall occurred further west and germination proceeded normally. (Ill. Ins. Rpt.).

WHEAT CURL MITE (*Aceria tulipae*) - KANSAS - Survey conducted October 25 to November 7 showed the following degree of infestation:

Counties	No. Fields Examined	Infestation	
		Percent Infested	Degree
Decatur, Norton, Sheridan, Thomas	10	40	Trace
Lane, Ness, Scott	4	50	Trace
Finney, Hodgeman	7	57	Trace
Jewell, Phillips, Rooks, Smith	7	85	Trace to light
Barton, Dickinson, Ellsworth, McPherson, Marion, Rush, Saline	20	55 30	Trace to light Heavy
Harvey, Pawnee	4		Trace to light
Geary	1		Heavy
Butler	1		Trace
(Somsen)			

ERIOPHYID MITES - TEXAS - Light infestations of undetermined species in fields of small grains in 12 panhandle counties. (Daniels).

GRASSHOPPERS - OKLAHOMA - Marginal damage by several species continued, but apparently reduced in alfalfa and small grains in widely scattered areas. Averaged 3-6 per square yard in some fields in Woods, Alfalfa, Major and Kingfisher Counties. Damaging infestations also noted in Stephens and Atoka Counties. (Okla. Coop.Sur.).  
NEW MEXICO - Damaged fields of winter wheat in northeast Curry County along margins and fence rows this fall; averaged 3-4 per square yard in the area. (N. M. Coop. Rpt.).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Migrating larvae damaging many central area fields of alfalfa located near cotton; most infestations limited to edges of fields. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - MARYLAND - Light numbers of second-instar larvae in alfalfa at White Hall, Baltimore County. (U. Md., Ent. Dept.).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - MARYLAND - Light numbers of adults collected from alfalfa at White Hall, Baltimore County. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Infesting fields of alfalfa in Table Rock area of Jackson County, November 4. This is first record for this county and in southern part of State. (Winters). CALIFORNIA - Light in alfalfa plantings in Vina, Tulare County. (Cal. Coop. Rpt.). NEW MEXICO - Generally light in alfalfa in Dona Ana County; controls applied to a few fields of seedling alfalfa. (N. M. Coop. Rpt.). OKLAHOMA - Light infestations in alfalfa. (Okla. Coop. Sur.). NEBRASKA - High populations in field of alfalfa in Greeley County and 2 fields in Howard County. (Bergman).

PEA APHID (*Macrosiphum pisi*) - NEW MEXICO - Populations generally light in Dona Ana County alfalfa, although few fields of seedling alfalfa have been treated. (N. M. Coop. Rpt.).



LYGUS BUGS (Lygus spp.) - ARIZONA - Adults averaged 25 per 10 sweeps in Maricopa County alfalfa. (Ariz. Coop. Sur.). NEBRASKA - L. lineolaris adults remain active in alfalfa in central portion of State. (Bergman).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Averaged 10 per 10 sweeps in Maricopa County alfalfa. (Ariz. Coop. Sur.).

GREEN JUNE BEETLE (Cotinis nitida) - VIRGINIA - Addenda to report in CEIR 10(46): 1075 at Drill Mountain. Area involved is a farm on top of Drill Mountain; about 30 acres heavily infested, averaging 25-30 larvae per square foot. Ground appears in state of upheaval, as if by ice, in most areas. Larvae averaged 50 per square foot in places where hay had been stacked and in piles of old dung. (Tarpley).

WHITE-FRINGED BEETLES (Graphognathus spp.) - NORTH CAROLINA - Inspection negative on 7 properties of 58 acres in Columbus County (Read, Nov. 8); additional infested acreage found in Union County, with all known infestations now treated in that county (Savage, Nov. 8). FLORIDA - Surveys conducted around concentration points in Jackson County revealed 260 acres of new infestation in the Alliance community during October. (Fla. Coop. Sur.).

#### FRUIT INSECTS

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OREGON - Fall migrants appearing in moderate numbers in Jackson County pear orchards. (Gentner).

BLACK-MARGINED APHID (Monellia costalis) - ARIZONA - Heavy on pecan trees in central and southwest areas of State. (Ariz. Coop. Sur.).

NAVEL ORANGEWORM (Paramyelois transitella) - CALIFORNIA - Medium infestations occurring in English walnuts in La Grange and heavy in almonds in Oakdale, Stanislaus County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

BEE T ARMYWORM (Spodoptera exigua) - CALIFORNIA - Severe infestations on sugar beets in El Centro-Niland areas of Imperial County. Large blocks of seedling beets destroyed in Imperial County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - TEXAS - Infesting lettuce in Uvalde and Zavala Counties. (Plowman).

BEAN WEEVIL (Acanthoscelides obtectus) - CALIFORNIA - Heavy on kidney beans in King City, Monterey County. (Cal. Coop. Rpt.).

A BEAN APHID (Triphidaphis phaseoli) - CALIFORNIA - Medium on bush beans in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - OKLAHOMA - Populations being reduced by parasites and predators in 1 turnip planting near Stillwater, Payne County; many plants were killed (up to 50 percent) while remaining were heavily damaged. Damaging infestations also noted on turnips in Atoka County. (Okla. Coop. Sur.).

A SERPENTINE LEAF MINER (Liriomyza sp.) - LOUISIANA - Damaging infestations remain active on fall tomatoes in East Baton Rouge Parish. (Spink).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - LOUISIANA - Infesting 2 fields of cabbage in St. Martin Parish, with damage in both fields. Infestations limited to few isolated mounds. (Spink).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - A total of 4,543 bushels of gin trash processed in 6 cotton-growing counties; 139 light traps operated for a total of 963 trap-nights; 701 lint cleaner inspections made in 212 gins and 77,877 green bolls inspected. All detection surveys negative. (Cal. Coop. Rpt., Nov. 4). ARIZONA - Three larvae collected in gin trash machines in Maricopa, Pinal and Pima County areas; 2 from Peoria and Cashion areas (Maricopa County) and 1 at a Marana gin in Pima County. It is not known whether larva taken at Marana came from a field in Pima County or in Pinal County. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE MOTH (Rhyacionia frustrana) - PENNSYLVANIA - Moderate infestation on Scotch pine plantation of 20,000 3-year-old trees. (Gesell, Oct. 18). OKLAHOMA - Six larvae and 134 pupae found alive in 250 tips examined in pine planting checked in Payne County; additional 6 larvae and 9 pupae found dead in tips. (Okla. Coop. Sur.).

PINE WEBWORM (Tetralopha robustella) - PENNSYLVANIA - Caused noticeable damage to jack pine in Lycoming County. (Nichols, Oct. 31).

BARK BEETLES (Dendroctonus spp.) - VIRGINIA - D. frontalis activity continues on Eastern Shore, with 5 acres in Northampton County reported involving 1-2 acres each and totaling 100 dead trees; reportedly involved in death of 6 loblolly pines in 1 spot in Princess Anne County. Dendroctonus spp. active on loblolly pine in Northampton County in 4 areas of 1-2 acres in size, with 50 dead trees. (Va. Div. For. Sur. Rpt., Sept. Sum.). TEXAS - Activity of D. frontalis decreasing in east. An estimated 10,000,000 board feet of sawtimber and 30,000 cords of pulpwood were killed in spite of an aggressive control program. (So. For. Pest Rpt., Nov. 1).

IPS BEETLES (Ips spp.) - VIRGINIA - Killing loblolly pines in 3 areas of Northampton County, 1/2-1 acre in size; 50 trees dead. (Va. Div. For. Sur. Rpt., Sept. Sum.).

PALES WEEVIL (Hylobius pales) - VIRGINIA - Damage heavy on loblolly seedlings less than one-year-old in 1 area of Accomack County. (Va. Div. For. Sur. Rpt., Sept. Sum.).

A PINE SAWFLY (Neodiprion excitans) - TEXAS - Continues active in eastern part of State, but no heavy or widespread defoliation expected during 1960. (So. For. Pest Rpt., Nov. 1).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Infestations continue; decreasing in shade trees in Love and McCurtain Counties. (Okla. Coop. Sur.). TEXAS - Common on oaks in Gonzales County. Several school children stung. (Stockton).

AN OAK SAWFLY (Caliroa lineata) - PENNSYLVANIA - Damaged top of several red oaks in Susquehanna County. (Gesell, Sept. 21).

APHIDS - CALIFORNIA - Drepanaphis acerifoliae medium on maple trees and Myzocallis kahawaluokalani heavy on crapemyrtle in Oroville, Butte County. (Cal. Coop. Rpt.).

TARNISHED PLANT BUG (Lygus lineolaris) - PENNSYLVANIA - Generally more abundant than usual on flowers during October. (Udine).

COCCIDS - CALIFORNIA - Aspidiotus perniciosus medium on cotoneaster in Oroville, Butte County, and medium on flowering plum in Encinitas, San Diego County. A. lataniae heavy on Photinia serrulata in a nursery in Gridley, Butte County. Parlatoria pittospori heavy on Melaleuca sp. and Pittosporum sp., medium on acacia and light on hakia in San Diego, San Diego County. Cinara tujafilina and

Pseudococcus gahani heavy on cedar, juniper and arborvitae in a nursery in Eureka, Humboldt County. (Cal. Coop. Rpt.). NEBRASKA - Aulacaspis rosae infesting ornamental roses in Pawnee County. (Roselle). VIRGINIA - Ceroplastes sp. heavily infesting Burford holly at a home in Suffolk, Nansemond County. (Amos, Oct. 29). NORTH CAROLINA - Ceroplastes sp. fairly widespread in Hertford County on camellias and other ornamentals; also present in Person County. (Ballentine, Farrier). Florinia theae ranged 5-30 per leaf on Chinese holly, locally, in Lenoir County. (Koonce, Farrier).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (Callitroga hominivorax) - KANSAS - Two flies reared from larvae collected from 2 different steers on October 3, in Ellis County, determined as this species by C. W. Sabrosky. (Harvey). NEW MEXICO - Continues a minor problem in cattle herds, especially in southern counties. (N. M. Coop. Rpt.).

Current Screw-worm Situation Report - Week Ending November 13, 1960

State	Cumulative Totals - 1960		Counties or Parishes	
	Cases	Premises		
Alabama	1	1	Geneva	
Arkansas	49	37	Chicot	Crawford
			Desha	Sevier
			Ashley	Drew
Florida	1	1	Hillsborough	
Louisiana	180	100	Richland	Caldwell
			Red River	Madison
			Franklin	West Carroll
			Rapides	Tensas
			De Soto	Catahoula
			Ouachita	La Salle
			Natchitoches	
Mississippi	96	49	Issaquena	Washington
			Sharkey	Leflore
			Sunflower	Warren
Totals	327	188	27	

Screw-worm Cases Intercepted at Inspection Stations: 1960 - 30 to date.

(Anim. Dis. Erad. Div.)

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COMMON CATTLE GRUB (Hypoderma lineatum) - NEW MEXICO - Counts up to 21 per head found in backs of range cattle in Eddy County. (N. M. Coop. Rpt.).

STABLY FLY (Stomoxys calcitrans) - OKLAHOMA - Averaged 1 per animal on dairy cows and 12 per animal on 9 dairy bulls in Payne County; averaged 1 per animal on beef cows in Pushmataha County. (Okla. Coop. Sur.).

HORN FLY (Siphona irritans) - OKLAHOMA - Continues light on cattle in many sections; averaged 25 per animal on dairy cows in Payne County and 30 per animal on beef cows in Pushmataha County. (Okla. Coop. Sur.). NEW MEXICO - Populations becoming much lighter on range cattle throughout State as temperatures drop. (N. M. Coop. Rpt.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Continued a nuisance in many areas of State as adults entered buildings seeking shelter from cool temperatures. (Okla. Coop. Sur.).

MOSQUITOES - UTAH - Mosquitoes were kept at very low level in Weber County. Light trap counts were lower than normal, but higher than during 1959. Culiseta inornata has been on increase for past 3 years, with fewest Aedes dorsalis ever taken. Controls applied to a total of 22,195 acres and 1,203 linear miles during the season; 20,000 Gambusia fish stocked. Trap lights in urban areas averaged only 2.56 mosquitoes per night. Culex tarsalis were taken in largest numbers, followed by Culiseta inornata, Aedes dorsalis, A. nigromaculis, A. vexans, Anopheles freeborni and Culex pipiens. (Fronk, Knowlton).

LONG-NOSED CATTLE LOUSE (Linognathus vituli) - OKLAHOMA - Light on occasional cattle checked in central and north central areas; numerous on some cattle checked in east central and southeast areas. (Okla. Coop. Sur.).

WASPS - OKLAHOMA - Several species continue annoying in many parts of State. (Okla. Coop. Sur.).

TICKS - OKLAHOMA; - Dermacentor albopictus adults appearing on dairy cows in Cherokee County; averaged 8 per animal on beef cows checked in Pushmataha County. Otobius megnini averaged 25 (ranged 5-55) per animal on cattle checked in Canadian and Pawnee Counties. Rhipicephalus sanguineus causing some concern to pet owners in Payne County area. (Okla. Coop. Sur.). NEW MEXICO - Large numbers of O. megnini found in ears of range cattle in Eddy County. (N. M. Coop. Rpt.).

#### BENEFICIAL INSECTS

A PARASITE (Dusmetia sangwani) - ARIZONA - Two releases of this parasite of Antonia graminis have been made in infested grasses in Tucson area, Pima County; one in Bermuda grass and one in Johnson grass. (Ariz. Coop. Sur.).

NABIDS - TEXAS - Light populations of several species in many panhandle area fields of small grain. (Daniels).

#### MISCELLANEOUS INSECTS

COCKROACHES - VIRGINIA - Light, local infestation of all stages of Supella supellecillum in storage building at Naval Supply Center, Norfolk. This is first known infestation at this location. (Sims). UTAH - S. supellecillum infesting a home and 2 apartments in Logan, Cache County. (Knowlton). NEW MEXICO - Blatta orientalis and Blattella germanica have become a serious nuisance in homes in Dona Ana and Bernalillo Counties. (N. M. Coop. Rpt.).

EUROPEAN EARWIG (Forficula auricularia) - PENNSYLVANIA - Collected in Lackawanna County, October 17, for a new county record. Det. by A. B. Gurney. (Gesell).

AN EARWIG (Labia minor) - PENNSYLVANIA - Collected in Lackawanna County October 17. (Gesell).

BOXELDER BUG (Leptocoris trivittatus) - KANSAS - Entering homes in Finney County area; numbers extremely large. (DePew).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - NORTH CAROLINA - Inspection of 212 acres on 9 properties in Union County negative (Read, Nov. 8); 79 properties totaling 1,698 acres in Anson County and 14 properties totaling 27 acres in Union County surveyed, with negative results. (Savage, Nov. 8).

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Common on and along highways in central part of State. (Newton).

A MECOPTERON (Merope tuber) - PENNSYLVANIA - Collected in a light trap at Beaver by a 4-H entomology member, Mark Carter, during October. (Adams).

CLOVER MITE (Bryobia praetiosa) - NEBRASKA - Invading homes in Lincoln area, Lancaster County. (Roselle).

#### CORRECTIONS

CEIR 10(44):1036 - APHIDS - OKLAHOMA - Rhopalosiphum splendens and R. subterraneum should read Rhopalosiphum rufiabdominalis. WYOMING - R. splendens should read R. rufiabdominalis. Both species are in synonymy with R. rufiabdominalis.

CEIR 10(45):1067 - Under Coccidae - Adpidiotus palmae should read Aspidiotus palmae.

CEIR 10(46):1080 - A SARCOPHAGID (Wohlfahrtia opaca) - IDAHO - Last statement should read: "In 1959, this same species....."

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
<b>ARKANSAS</b>						
Morrilton 11/3-9	4		13			6
Fayetteville 11/3-9	4		6			8
<b>FLORIDA</b>						
Quincy 10/31			1			4
Gainesville 11/6		1			1	2
<b>INDIANA (County)</b>						
Tippecanoe 10/27-11/10	3					6
<b>KANSAS</b>						
Garden City 10/23-30	10		7	1		19
Hays 10/30,31	8		1			104
Manhattan 10/25-28						25
Mound Valley 10/27	4		1	4		
Wathena 10/19-11/6	37		11	9		326
<b>LOUISIANA</b>						
Baton Rouge 11/4-10	6	2	2		10	
<b>SOUTH CAROLINA</b>						
Charleston 10/31-11/6	7	1	12		3	2
<b>TENNESSEE (Counties)</b>						
Maury 10/1-7	3					
Robertson 10/1-7	7		7			5
Cumberland 10/1-7	3		5			2
Greene 10/1-7	13	1	4			1
Blount 10/1-7	2		2			
<b>TEXAS</b>						
Waco 11/5-11	2			2	13	1
Brownsville 10/29-11/4	4	33	1		2	

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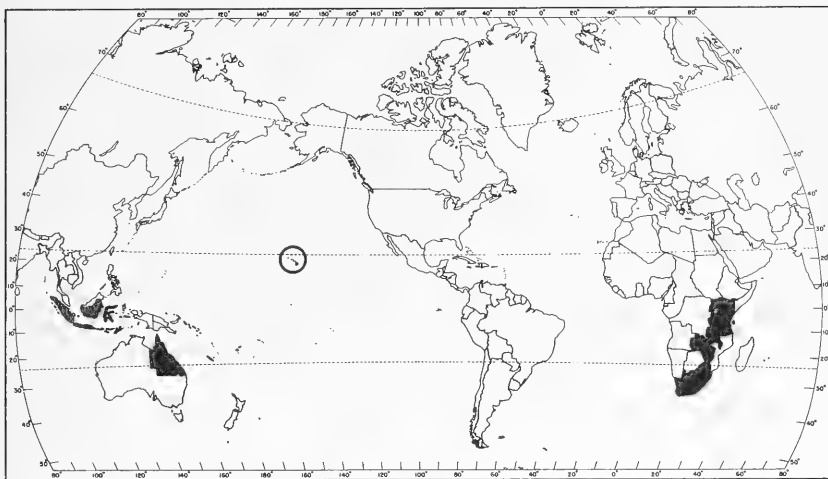
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES <sup>1</sup>

NUTGRASS ARMYWORM (Spodoptera exempta (Walker))

Economic Importance: This noctuid is one of the most important pests of cereals and other grasses in Africa. Extensive damage has occurred periodically. Outbreaks take place at approximately five-year intervals in Southern Rhodesia and sometimes cause severe injury to corn. The species has caused damage in Hawaii for many years where it is of concern annually in sugarcane plantations. Damaging infestations have also been reported in sugarcane, corn and forage grasses in Queensland, Australia.

Hosts: Corn, sugarcane, small grains and other grasses preferred. Also reported on many other plants including cotton, tobacco and potato.

Distribution: Hawaii, Australia (Queensland), Africa (Federation of Rhodesia and Nyasaland, Kenya, South Africa, Tanganyika, Uganda), Indonesia.



General Distribution of Spodoptera exempta

Life History and Habits: The moths are nocturnal. Eggs are deposited in masses on food plants. Hatching occurs within a week in Southern Rhodesia. Larvae begin feeding voraciously and are full grown in about 3 weeks. Pupation occurs in the soil and moths emerge within 14 days. Under experimental conditions, the life cycle from egg to adult requires about 40 days. Outbreaks rarely last more than 10 days after the larvae are noted. Optimum conditions for an outbreak appear to be high temperature during the oviposition period and an abundance of succulent grasses for the young larvae.

Description: ADULT wing expanse about 30 mm. Color variable, some specimens darker than others. Brownish with white underwings. Very similar to related species in appearance. LARVA - Length 25-30 mm. Dark colored, dorsum dark green with a lighter narrow median line. This median line consists of three thin light lines. Two thin light lines border the dark dorsal area. A narrow dark stripe runs along the region of the spiracles, which are dark brown or black. Ventral surface and legs light yellowish-green. Head uniformly blackish or reticulate; edge of eyes and lateral margins of front whitish. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).  
CEIR 10(47) 11-18-60



Male (above) and Female (below) of Spodoptera exempta





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ECONOMIC INSECT  
REPORT

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PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

Several additional infestations of WHITE-FRINGED BEETLES reported in North Carolina. (p. 1100).

Current SCREW-WORM situation report. (p. 1102).

Second and third occurrences of RED TICK found; one in New York and one in Florida. This species was first reported in the United States in Florida on October 4, 1960. (p. 1103).

KHAPRA BEETLE infestation found on premises in Borrego Valley, San Diego County, California. This is only current infestation in the State. (p. 1103).

Additional IMPORTED FIRE ANT infestations found in Brunswick County, North Carolina. (p. 1104).

INTERCEPTIONS of special interest at U. S. ports of entry. (pp. 1105-1106).

INSECTS not known to occur in the United States. (p. 1107).

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WEATHER BUREAU 30-DAY OUTLOOK  
MID-NOVEMBER TO MID-DECEMBER

The Weather Bureau's 30-day outlook for the period from mid-November to mid-December calls for temperatures to average above seasonal normals in the area east of the Continental Divide except for near normal over the Southern States. West of the Divide near-normal temperatures are predicted except for below in the Southern Plateau. Precipitation is expected to exceed normal in the Great Lakes region, Mississippi Valley, and Pacific Northwest. Subnormal amounts are anticipated over the Southwest, Northern Plains, and Middle Atlantic coast. In areas not specified near-normal amounts are probable.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING NOVEMBER 21

Over much of the Nation the weather of the week was unseasonably mild and sunny, with precipitation exceeding 1/2 inch mainly limited to the Pacific Northwest, east Texas, the Mississippi Valley, and the Great Lakes region. This week was slightly cooler than the previous week, mild in the Far Southwest and 6° to as much as 15° warmer in the remainder of the Nation.

Temperatures for the week averaged 6-9° above normal in the midcontinent area and 3-6° elsewhere except about normal to locally as much as 3° below in the Far Southwest. In the midcontinent area, maximum temperatures early in the week rose into the 70's and 80's in the southern areas and into the 70's as far north as South Dakota and Iowa.

Precipitation occurred daily in the Pacific Northwest. Weekly totals ranged from 1 to 3 inches in the northern third of California, from 2 to over 6 inches in western Oregon and Washington and generally from 1/4 to over 1/2 inch in eastern Oregon and Washington and most of Idaho. In south central and southeastern Texas, general rains continued throughout most of the week, producing weekly totals to 3 inches.

General rains over the Mississippi Valley and Great Lakes on the 15th and 16th generally totaled from 1/2 to over 1 inch. These rains were produced by a storm system that developed strong intensity as it moved from the central Great Plains across the Great Lakes. High winds and thunderstorms, some with hail, preceded the cold front across the Mississippi Valley on the 15th, and tornadoes were reported near Belle and Lebanon, Missouri, and Belleville and Chili, Wisconsin.

Precipitation was very light in most of the East, the Great Plains, and Far Southwest. Moisture is needed in the northern Great Plains. Most of South Dakota has received only an inch or less of moisture since late September. Many sections in the Southeast are also very dry. Many stations in central and southern Georgia have received less than 1 inch of rain during the past 6 weeks.

Owing to mild weather during the week, virtually no snow cover now exists east of the Rocky Mountains. Moderate to heavy snow fell during the week in the Cascade and Sierra Nevada Mountains. However, snow depths in the Cascades above 4,000 feet now range from 40 to 50 inches. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Infestations continued common in many fields of small grain throughout State. Populations heavy enough to cause damage to plants in barleyfield in Canadian County. High numbers noted in several fields in Pawnee County. R. maidis remains most common species of aphid on small grain in State. (Okla. Coop. Sur.).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Infestations continued in fields of small grain in counties previously reported infested this fall. No additional infested counties found. (Okla. Coop. Sur.).

AN APHID (Rhopalosiphum rufiabdominalis) - WYOMING - Infesting small grains used in experimental tests in greenhouses at University of Wyoming. (Fullerton). OKLAHOMA - Populations continue to increase and spread in a wheatfield in Okemah area, Okfuskee County. Small numbers noted in oatfield in same area. (Okla. Coop. Sur.).

RUSTY PLUM APHID (Hysteroneura setariae) - ARIZONA - Infestations beginning to decline on field crops in central area, but migrating winged forms still very abundant. (Ariz. Coop. Sur.).

PINK SCAVENGER CATERPILLAR (Pyroderces rileyi) - NORTH CAROLINA - Attacking ear corn on stalk in field in Robeson County. (Bartley, Farrier).

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - NEW MEXICO - All specimens collected during European corn borer survey from roots of corn in Hidalgo and Luna Counties identified as this species. (N. M. Coop. Rpt.).

WHITE GRUBS - OKLAHOMA - Unidentified species damaging some fields of small grains in Blaine and Cotton Counties. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Infestations in Yuma County alfalfa declining; populations now low or absent statewide. (Ariz. Coop. Sur.). OKLAHOMA - Present in some fields of alfalfa in Payne and Noble Counties. (Okla. Coop. Sur.).

LYGUS BUGS - TEXAS - Several species averaged 2 per sweep in Brazos and Burleson County fields of alfalfa. (Newton).

STINK BUGS - TEXAS - Several species averaged 2 per sweep in alfalfa in Brazos and Burleson Counties. (Newton).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Adults averaged 3-5 per sweep in fields of alfalfa in Brazos and Burleson Counties. (Newton).

A GRASSHOPPER (Melanoplus bilituratus defectus) - CALIFORNIA - Medium in alfalfa and Sudan grass in Daggett area of San Bernardino County. (Cal. Coop. Rpt.).

FALL ARMYWORM (Laphygma frugiperda) - VIRGINIA - Light on alfalfa at Stuart, Patrick County. Det. by H. W. Capps. (Olinger, Nov. 3). OKLAHOMA - Isolated infestations continue to cause light to heavy damage to limited number of alfalfa and small grain fields in southwest, north central and northwest areas. (Okla. Coop. Sur.).

BEEET WEBWORM (Loxostege sticticalis) - UTAH - Attack on beets and alfalfa very light, with populations well below normal. (Knowlton).

CORN EARWORM (Heliothis zea) - TEXAS - Larvae averaged 2 per sweep in fields of alfalfa in Brazos and Burleson Counties. (Newton).

GREEN CLOVERWORM (Plathypena scabra) - TEXAS - Averaged 2.5 per sweep in Brazos and Burleson County alfalfa. (Newton).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - TEXAS - Averaged 2-4 per sweep in alfalfa in Brazos and Burleson Counties. (Newton).

WHITE-FRINGED BEETLES (Graphognathus spp.) - NORTH CAROLINA - Infestations found in 8 or 10 new blocks in city of Lumberton, Robeson County. (Thompson, Nov. 4). Moderate infestation found on 15 acres as a result of incomplete delimiting survey of new infestation in Stanly County. Infestation one mile east of Albemarle on State Highway 27 in a church and cemetery lot and adjacent residential yards, small pastures and fields. Very few live adults found. (Johnson, Nov. 4). New extension found on extreme south end of 29A Salisbury extension. Delimiting will reveal perhaps 20-30 infested acres. (Mulder, Nov. 4).

#### FRUIT INSECTS

PEAR-SLUG (Caliroa cerasi) - CALIFORNIA - Light larval populations feeding on apple leaves in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - CALIFORNIA - Medium on apple trees in Orick, Humboldt County. (Cal. Coop. Rpt.).

PEACH SILVER MITE (Aculus cornutus) - CALIFORNIA - Heavy populations on peach trees causing curling leaves in Davis, Yolo County. (Cal. Coop. Rpt.).

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Attack on apples and other fruits reduced quality in number of orchards in southern Utah County. (Knowlton, Thornley).

BLACK-MARGINED APHID (Monellia costalis) - ARIZONA - Heavy infestations continue on pecan trees in central and southwest areas. (Ariz. Coop. Sur.).

YUMA SPIDER MITE (Eotetranychus yumensis) - ARIZONA - Light in a few Yuma County citrus groves. Most mites are on upper leaf surfaces, but some are also on fruit. (Ariz. Coop. Sur.).

A PEEL MINER (Marmara salictella) - ARIZONA - Infesting fruit of some lemon groves in Yuma County; 40 percent of fruit being infested in one grove. Damage to infested fruit caused a reduction to second grade. One red grapefruit grove also found to have 3 percent of fruit infested. (Ariz. Coop. Sur.).

#### TRUCK CROP INSECTS

BEEF ARMYWORM (Spodoptera exigua) - CALIFORNIA - Medium on celery in Chula Vista, San Diego County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - CALIFORNIA - Medium infestation occurring on lettuce plantings in Richmond, Contra Costa County. (Cal. Coop. Rpt.).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - OKLAHOMA - Widespread on turnips and collards in Choctaw County and on turnips in Okfuskee County. (Okla. Coop. Sur.).

A TREEHOPPER (Antianthe expansa) - CALIFORNIA - Heavy on tomatoes in Culver City, Los Angeles County. (Cal. Coop. Rpt.).

#### COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - A new infestation found in a 60-acre field 5 miles north of El Mirage, Maricopa County. Infestation was indicated by gin trash pickup and confirmed by field inspection. (Ariz. Coop. Sur.).



FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PINE MOTH (Rhyacionia sp.) - VIRGINIA - Locally medium and killing tops of small loblolly pines near Cullen, Charlotte County. (Morton).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NEW MEXICO - Extremely abundant on pine trees in vicinity of Taos, Taos County. (N. M. Coop. Rpt.).

COOLEY SPRUCE GALL APHID (Chermes cooleyi) - NEW MEXICO - Old galls abundant, with occasional new gall being found on Colorado blue spruce in area near Cloudcroft, Otero County. (N. M. Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Caused considerable concern in Burleson, Lee and Washington Counties; few trees completely defoliated. (Newton).

PUSS CATERPILLAR (Megalopyge opercularis) - TEXAS - Continues troublesome in several south central counties. (Newton).

FOREST TENT CATERPILLAR (Malacosoma disstria) - UTAH - Caused spotted injury over northern portion of State, but was less damaging than during recent years when in outbreak abundance. (Knowlton).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Damage continued to be evident over a wide section of the State; most damage occurred to elm and pecan trees. (Okla. Coop. Sur.).

A BOSTRICHID (Amphicerus cornutus) - CALIFORNIA - Heavy on acacia trees in Riverside, Riverside County. (Cal. Coop. Rpt.).

SCALE INSECTS - CALIFORNIA - Aonidiella aurantii heavy on ceanothus in a nursery property in Marysville, Yuba County. (Cal. Coop. Rpt.). OKLAHOMA - Unaspis euonymi causing heavy damage to some nursery plants in Bryan and Oklahoma Counties. (Okla. Coop. Sur.). NORTH CAROLINA - Pseudaulacaspis pentagona infesting privet locally in Granville County. (Morgan, Farrier). Up to 200 Florinia theae per leaf on Camellia japonica, locally, in Wayne County. (Jones, Farrier).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - This species and Clastoptera sp. medium on acacia trees in Pasadena, Los Angeles County. (Cal. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - WYOMING - Infesting many plants in greenhouses throughout the State. (Fullerton).

SPIDER MITES - WYOMING - Tetranychus telarius infesting ornamental plants in greenhouses throughout State. (Fullerton). OREGON - Oligonychus ununguis causing severe localized damage to ornamental Colorado blue spruce in Portland area. Det. by G. W. Krantz. (Every).

EARWIGS - TEXAS - Undetermined species causing considerable nuisance in flower beds and in homes in Walker and Montgomery Counties. (Newton).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - OKLAHOMA - H. lineatum appearing in backs of cattle in all sections of State; averaged 3 per animal in 10 calves checked in Noble County. (Okla. Coop. Sur.). INDIANA - No Hypoderma sp. found upon examination of 200 native cattle at Southern Forage Farm, Dubois County. (Matthew, Nov. 11).

HORN FLY (Siphona irritans) - OKLAHOMA - Infestations continue on cattle in Osage and Pushmataha Counties; averaged 15 per animal on range cattle checked in the latter county. (Okla. Coop. Sur.). INDIANA - Three observed on one of 200 cattle examined at Southern Forage Farm, Dubois County. (Dobson, Nov. 11).

SCREW-WORM (*Callitroga hominivorax*) - OKLAHOMA - Infestations reported from Jefferson and Choctaw Counties. (Okla. Coop. Sur.). LOUISIANA - Seven new infestations reported; 2 from West Carroll Parish and 1 each from Richland, East Carroll, Natchitoches, Franklin and Red River Parishes. (Spink).

Current Screw-worm Situation Report - Week Ending November 20, 1960

State	Cumulative Totals - 1960		Counties or Parishes
	Cases	Premises	
Alabama	1	1	Geneva
Arkansas	51	39	Chico Desha Ashley
Florida	1	1	Crawford Sevier Drew
Louisiana	214	106	Hillsborough
			Richland Caldwell Red River Madison Franklin West Carroll Rapides East Carroll De Soto Catahoula Ouachita La Salle Natchitoches Tensas
Mississippi	98	50	Issaquena Washington Sharkey Leflore Sunflower Warren
Totals	365	197	28

Date First Case Found This Year: Alabama - 8-30-60; Arkansas - 7-28-60;  
Florida - 10-7-60; Louisiana - 7-12-60; Mississippi - 7-29-60.

Date Last Case Reported This Year: Alabama - 8-30-60; Arkansas - 11-18-60;  
Florida - 10-7-60; Louisiana - 11-18-60; Mississippi - 11-18-60.

Screw-worm Cases Intercepted at Inspection Stations: 1958 - 8; 1959 - 6;  
1960 - 32 to date.

(Anim. Dis. Erad. Div.).

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FACE FLY (*Musca autumnalis*) - INDIANA - Warm days during period November 14-18 extended problem in homes in localized areas of Tippecanoe and Warren Counties. (Matthew, Laemmlen).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Continues to be a nuisance in and around homes in eastern half of State. (Okla. Coop. Sur.).

AN EYE GNAT (*Hippelates collusor*) - ARIZONA - Very heavy populations continue as a problem on the Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

MOSQUITOES - TEXAS - Aedes sollicitans increased in numbers somewhat over September in Jefferson County, being most noticeable in the South Park section of Beaumont. A. taeniorhynchus increased only in the Port Arthur area. Psorophora confinnis increased only in this same area, possibly because of strong north winds. Anopheles crucians increased significantly in Port Arthur; this may be due to extensive breeding in the salt marshes. Larval surveys during the past several years have confirmed that the vast majority of the members of the crucians complex in the Jefferson County area are the true crucians. Because of recent interest in the ratio of Culex salinarius to C. nigripalpus, an extensive larval survey, extending from the salt marshes to the rice fields showed an average of 1 C. nigripalpus to 17 C. salinarius. (Jeff. Co. Mosq. Cont. Comm.). OKLAHOMA - Unidentified species a nuisance to people throughout Bryan County. (Okla. Coop. Sur.).

LICE - OKLAHOMA - Unidentified species common on cattle checked in Muskogee County; beginning to appear (remain light) on cattle in Cleveland and Choctaw Counties. Haematopinus suis common on hogs in Cotton County. (Okla. Coop. Sur.).

RED TICK (Rhipicephalus evertsi evertsi) - Discovery of specimens of this live-stock pest on zoo animals near Tampa, FLORIDA, and near Hudson, NEW YORK, mark the second and third occurrences in the United States within a month. Specimens were taken from 7 of 10 zebras consigned to a private zoological garden near Tampa, Florida, and from 2 of 3 zebras received at a game farm near Hudson, New York. All animals were part of a shipment of 14 zebras originating in Kenya, East Africa. One zebra is still confined at the quarantine station at Clifton, New Jersey. Eradication measures have been taken. (Anim. Dis. Erad. Div., Nov. 4). First occurrence of this pest in North America was reported in CEIR 10(42): 970.

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Common in moderate numbers on dogs checked in Cleveland County. (Okla. Coop. Sur.).

TICKS - OKLAHOMA - Unidentified species noted on cattle in Pushmataha and Choctaw Counties; averaged 10 per animal on 45 range cattle checked in Pushmataha County. (Okla. Coop. Sur.). NEW MEXICO - Adults, probably Dermacentor albipictus, very abundant on deer which were killed in southern part of State. (N. M. Coop. Rpt.). CALIFORNIA - Specimens of Ixodes pacificus taken from a man in Feather Falls, Butte County, and at Norwalk, Los Angeles County. (B. Keh).

FOWL TICK (Argas persicus) - OKLAHOMA - Common in some poultry flocks checked in Cotton County. (Okla. Coop. Sur.).

#### STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - Light to medium infestation found on premises in Borrego Valley, San Diego County. This is a unit of a property consisting of several scattered buildings. Only known current infestation in the State. The last known infestation was fumigated May 15, 1960. (Cal. Coop. Rpt.).

#### BENEFICIAL INSECTS

LACEWINGS (Chrysopa spp.) - TEXAS - Averaged 1.5 per sweep in Burlleson County alfalfa. (Newton).

NABIDS - TEXAS - Several species averaged 3.5 per sweep in Burlleson County alfalfa. (Newton).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri)- NORTH CAROLINA - Eleven properties found infested in Brunswick County. Requested surveys, as well as those in conjunction with control work, have revealed several new acres of infestation; all within general infestation area. However, many infestations very light and some fairly isolated. (Branen, Nov. 4). All survey during week ending November 4 negative. (Savage, Monroe). Resurvey of old infestation in Red Springs, Robeson County, negative. Additional surveys up to 3 miles away from Red Springs planned. (Lott, Nov. 4).

FIRE ANT (Solenopsis geminata) - TEXAS - Mounds very common along roadsides and in fields in Brazos, Burleson, Lee and Washington Counties. As many as 2-3 mounds per square yard in some areas. (Newton).

LARGER YELLOW ANT (Lasius interjectus) - MARYLAND - Winged forms noted around homes in Baltimore, Caroline and Prince Georges Counties. (U. Md., Ent. Dept.).

BOXELDER BUG (Leptocoris trivittatus) - VIRGINIA - Adults and nymphs common in several areas of Roanoke and Roanoke County and common in area of Tazewell County. (Allen, McDonald, Rowell; Nov. 1).

AN EARWIG (Labidura riparia) - CALIFORNIA - Light infestation in a kitchen of a home in Indio, Riverside County. This species is extending farther west and north each year. (Cal. Coop. Rpt.).

A NOCTUID (Melipotis idomita) - ARIZONA - Migrating larvae a problem around homes in Yuma area, particularly where host mesquite trees are located nearby. (Ariz. Coop. Sur.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Prevalent along roadsides and on highways in Burleson, Lee and Grimes Counties. (Newton).

A POWDER POST BEETLE (Trogoxylon prostomoides) - CALIFORNIA - Heavy infestation in Japanese bamboo drapes in a home in Richmond, Contra Costa County. (Cal. Coop. Rpt.).

A SPRINGTAIL (Hypogastrura matura) - CALIFORNIA - Heavy populations occurring on sidewalks and attracting attention in Vacaville, Solano County. (Cal. Coop. Rpt.).

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported August 31 by the Plant Quarantine Division, ARS, USDA, are as follows:

An OLETHREUTID (Grapholitha janthinana Dup.) (identified as possibly this species) in apples from Romania in baggage destined for Michigan at New York; New York.

A TERMITE (Reticulitermes speratus Kolbe) (an economic species of Japan, Korea and Okinawa) in dead wood in soil with Juniperus sp. in baggage from Japan at Honolulu, Hawaii.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) 5 times; at Honolulu, 2 times in baggage destined for the mainland and at San Pedro, California, 3 times in baggage and quarters.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 8 times; at San Juan, Puerto Rico, one time in baggage for Puerto Rico; at Boston, Massachusetts, one time in baggage for unknown destination; at New York 2 times in baggage and stores; at Honolulu 4 times in baggage destined for California.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in cargo from Mexico destined for Los Angeles, California, at El Paso, Texas.

A TINGID (Corythucha mcelfreshi Drake) (a species not previously represented in the USNM collection) on geranium cuttings in baggage from Mexico destined for Texas at Brownsville, Texas.

A BRUCHID (Callosobruchus analis (F.)) (a widespread storage pest of legumes) in faba beans, in baggage destined for California from Burma, at Honolulu.

A BRUCHID (Callosobruchus rhodesianus (Pic)) (an African species possibly intercepted and identified previously as C. chinensis) for the first identification record of species, in beans and lentils in stores from West Africa at New York.

A SCOLYTID (Dactylotrypes uytenboogaarti Eggers) (a pest of date palm seed in Southern Europe and the Canary Islands) in seeds of Mediterranean palm in mail from Spain destined for California at Hoboken, New Jersey.

KHAPRA BEETLE (Trogoderma granarium) 11 times; at San Pedro 2 times in stores; at Houston, Texas, one time in stores; at Wilmington, Delaware, 2 times in stores; at Norfolk, Virginia, one time in cargo of myrobalan nuts; at Baltimore, Maryland, one time in refuse of myrobalan cargo on ship's deck; at New York 4 times, including 3 in cargoes of guar gum, cinnamon and cumin seeds for New York markets, and one in stores.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) 10 times in cherries from Poland, France, Italy and Germany; at Chicago, Illinois, one time in baggage for Chicago; at Los Angeles one time in baggage; at Boston 5 times in stores and baggage for Boston or New York destinations; at New York 3 times in baggage and airplane stores for New York and Chicago destinations.

MEXICAN FRUIT FLY (Anastrepha ludens) 25 times in baggage, including 22 for California destinations; at San Ysidro, California, 12 times; at Calexico, California, 3 times; at Nogales, Arizona, 4 times; at Del Rio, Texas, one time; at Laredo, Texas, 2 times; at Eagle Pass, Texas, 3 times. Also Anastrepha sp. destined for Florida, at Eagle Pass.

A STENOMID (Stenoma catenifer Wlsm.) in baggage from El Salvador at Miami, Florida.

A SNAIL (Helicella sp.) (of potential quarantine importance) on cut anemone flowers in cargo from France at New York.

A SNAIL (Achatina fulica Bowdich) in cargo of Latte Stone from Guam for destination in Washington, D.C.; at San Diego, California.

GOLDEN NEMATODE (Heterodera rostochiensis) in soil with tuber ullucus in stores from Peru at Boston (tuber ullucus (Ullucus tuberosus) has been reported as a new host for this nematode in Peru).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
<b>ARIZONA</b>							
Mesa 11/8-13			61		11		5
<b>ARKANSAS</b>							
Morrilton 10/10	11			2			1
Fayetteville 10/10							2
<b>FLORIDA</b>							
Quincy 11/7,14				4		5	2
Monticello 11/9,15	1			2		2	1
<b>INDIANA (County)</b>							
Tippecanoe 11/11-16	2			1			4
<b>LOUISIANA</b>							
Baton Rouge 11/11-17	39	27		4		4	2
<b>SOUTH CAROLINA</b>							
Charleston 11/7-13	29	2		34		7	8
<b>TENNESSEE (Counties)</b>							
Monroe 11/8-14	7						
Maury 11/8-14	5			1			
Robertson 11/8-14	2			8			
Cumberland 11/8-14	14			7			
Greene 11/8-14	3			2			
Blount 11/8-14	28			4	1		1
<b>TEXAS</b>							
Brownsville 11/5-11	12	40	4	10		9	1
Waco 11/12-18	6				8	11	12

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

ANDEAN POTATO WEEVILS (Premnotrypes spp.)

Economic Importance: In 1914 potatoes from Peru were found infested with weevil larvae. The larvae were reared and the specimens described by W. D. Pierce as Premnotrypes solani and Trypopermon latithorax: (latithorax was later transferred to Premnotrypes). Since that time, South American potatoes infested with larvae of Premnotrypes spp. have been intercepted at ports of entry on several occasions. In addition to the two species mentioned, P. vorax is also considered to be of some economic importance. Altogether, there are six species in the genus recorded as infesting potatoes in parts of South America. As the common name indicates, these insects are principally damaging at higher elevations although isolated cases of infestations have been found in the coastal regions.

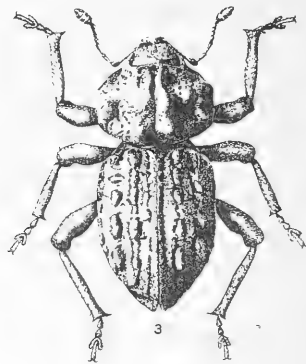
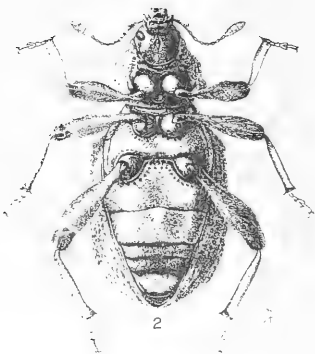
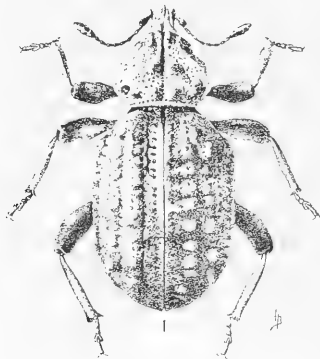
Distribution: P. latithorax (Pierce), Bolivia, Peru and Chile; P. solani Pierce, Peru; P. vorax (Hust.), Colombia and Ecuador.

Host: Potato. Also may attack Solanum wittmackii in rare cases.

Life History and Habits: Life history and habits of the weevils covered here are very similar. Adults are active in potato plantings from August to December in Peru feeding on leaves and tubers. The females enter the ground and deposit eggs in the soil or on developing tubers. Hatching occurs about January and the larvae are active until July. The larvae bore into the tubers producing irregular galleries and tunnels about 1 cm. in diameter. The entrance hole heals and the presence of the larvae in the tuber cannot be detected from outside examination. Usually only one larva is found per tuber but as many as 20 or more have been reported. When a tuber is consumed, the larvae may migrate to others. Upon reaching full development, the larva forms an oval cavity in a gallery just beneath the peel of the potato and pupates. Pupation takes place in July and August. Apparently there is only one generation a year.

Description: P. solani Pierce, type of genus. Length, 7mm.; breadth, 3.75 mm. Color brown, with bronzy scales. Rostrum thick; narrowest at middle. Alae strongly flared; scrobes open above. Head with small tubercles above the eyes. Median line sharply defined, deepened at frontal fovea, then bifurcate to form a median ridge. The fine median line begins again on this ridge and extends to the apex. Beginning even with the front edges of the eyes the lateral impressions extend half the length of the beak. Apex of beak shining black, nasal plate raised. Mandibles bidentate, shining black. Antennal scrobes strongly flexed downward; scape clavate; funicle with all joints longer than wide, gradually decreasing in size toward apex; club elongate; first two joints occupying over half the bulk. Head, beak, and scape densely covered or clothed with fine, silky, bronzed scales; funicle sparsely pubescent; club minutely pubescent. Prothorax basally truncate, apically sinuate, ocular lobes prominent, without vibrissae; coarsely punctured, finely squamose with yellowish to golden metallic scales; median line punctate, strongly impressed; surface with six basal, two discal, and four apical tubercles; widest behind middle at points of lateral basal tubercles. Elytra at base no wider than thorax; humeri rounded; sides rounded, rough, wider than prothorax. Scutellum minute, triangular, depressed. Surface densely minutely scaly; striae irregular, with small definite punctures; entire surface rough, but the third, fifth, and seventh intervals especially are raised by a series of small tubercles, which

give the striae a wavy direction. Prosternum strongly arcuately emarginate, not more than one-half as long as pronotum. Anterior coxae contiguous. Mesosternum taken up almost entirely by the coxae, which are narrowly separated; side pieces unequal. Metasternum also short. Undersides and legs densely squamose. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(48) 11-25-60.



Adults of Premnotrypes spp.: 1,2 - P. solani; 3 - P. latithorax

Major references: Munro, J. A. 1954. FAO Plant Prot. Bul. 2(7):97-101; Willie, J. E. 1952. Entomologia Agricola del Peru, pp. 401-405, Lima; Pierce, W. D. 1914. Jour. Agr. Res. 1(4):346, 349-350.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GREENBUG populations gradually increased in known infested fields of small grains in Oklahoma. Annual CHINCH BUG hibernation survey completed in Oklahoma, with very severe infestations recorded only in Cotton County. Late buildup of SPOTTED ALFALFA APHID reported in southeastern Nebraska and some high adult populations noted in Greeley and Howard Counties, Nebraska. Populations also increasing and becoming more common in alfalfa in Oklahoma. THREE-CORNERED ALFALFA HOPPER counts high in alfalfa in areas of Texas and Arizona. (p. 1111).

FALL CANKERWORM adults abundant in New Haven and Fairfield Counties, Connecticut. (p. 1113).

Current SCREW-WORM situation report. (p. 1114). WINTER TICK medium to heavy on cattle in McCurtain and Johnston Counties, Oklahoma. (p. 1115).

INTERCEPTIONS of special interest at U.S. ports of entry. (pp. 1117-1118).

HAWAIIAN insect notes. (p. 1118).

INSECTS not known to occur in the United States. (p. 1119).

INSECT DETECTION: New county records reported were a delphacid (Sogata cubana) in St. Mary Parish, Louisiana (p. 1111); white-fringed beetles in Northampton and Greene Counties, North Carolina, and Crockett County, Tennessee (p. 1112); and imported fire ant in Lexington and Richland Counties, South Carolina (p. 1115). A new state record reported in Hawaii was an encyrtid (Gahaniella sp.), which was collected on Oahu. Several new island records for Molokai, Hawaii, also reported. (p. 1118).

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WEATHER OF THE WEEK ENDING NOVEMBER 28

For the second consecutive week unusually mild and mostly dry, sunny weather prevailed from the central Rocky Mountains and Great Plains to the Atlantic coast. Temperatures for the week averaged from 6° to 12° above normal in the central Rockies and Midcontinent area and 3° to 6° above in the East. During the latter half of the week, temperatures in many sections east of the Rockies rose to record or near-record high levels for so late in the year. Record highs for so late in the season ranged from 71° at Bismarck, North Dakota, on the 25th to 86° at Tampa, Florida, on the 28th. Other late season highs included 77° at Pierre, South Dakota; 75° at Sioux City, Iowa; and 55° at Sault Ste. Marie, Michigan.

In the Pacific States, temperatures for the week averaged from slightly above to slightly below normal, and the first autumn freeze occurred in some of the northern and central coastal valleys of California.

East of the Rockies, moisture in excess of 1/2 inch was mainly limited to sections of the South Central Interior and eastern portions of the Carolinas. Nearly all of it fell during the first 2 days of the week, when general light to moderate rain occurred in the southwestern Great Plains and east of the Mississippi.

In the Far West, the weather was rather stormy with almost daily precipitation in the Pacific Northwest, where weekly totals ranged up to more than 8 inches along the coast. Heaviest amounts were reported from western Oregon, where heavy flooding caused considerable damage and forced a number of persons to evacuate their homes along tributary streams of the Willamette River. Weekly totals ranged from 3 to 5 inches in northeastern California and from 1/4 to 1/2 inch in the central portion of the State, and from 1/2 to over 1 inch in eastern Washington, northern Idaho, central Oregon, and on the eastern slopes of the Sierras. Snowfall substantially increased the mountain snowpack in the Sierra - Cascade and Rocky Mountain ranges. In the Cascades, snow depths above the 3,000-foot level now range from 40 to 60 inches. Recent heavy precipitation has improved the 1961 water outlook in much of the Far West. In Nevada, reservoirs, nearly empty after 2 years of drought, are beginning to refill.

The storm system, which brought general precipitation to the Far West near the end of the period, moved into the central Great Plains where it gained strong intensity on Sunday and Monday. The first blizzard conditions of the season prevailed in the northern Great Plains. In South Dakota, glaze disrupted communication lines on the 27th and 4 to 8 inches of snowfall, drifted by winds up to 60 m.p.h., reduced visibility to zero, blocked roads, and forced schools to close. Temperatures fell to near zero in the northern Plains and to subzero levels in the northern Rockies. West Yellowstone, Montana, reported -20° on the 28th. Snow now covers northern Minnesota and the northern Plains with depths generally ranging from 1 to 3 inches, but ranges up to 9 inches in western Nebraska and up to 6 inches in eastern South Dakota. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Scattered, light infestations noted for first time this fall in Noble, Pawnee, Marshall, Johnston and possibly Hughes Counties. Populations gradually increased in known infested areas. Populations doubled during past 2 weeks in heavily infested field in Hennessey area and continued spotty and light in other fields in immediate area. Reports from most counties continued negative. Medium infestation (30 per linear foot) noted in field of barley in Jackson County; first positive report from this area this season. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Moderate, widespread infestations on barley in Collin County. (Davis). OKLAHOMA - Common in fields of small grain in Kingfisher and Blaine Counties. (Okla. Coop. Sur.).

A DELPHACID (Sogata cubana) - LOUISIANA - Reported for the first time from the State in Avoyelles and St. Martin Parishes (CEIR 10(45):1052) on October 28. Now present in St. Mary Parish. (Spink).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Annual chinch bug hibernation survey conducted in 66 counties during the period November 15-23. Results showed infestation to be very severe in Cotton County, moderate in Comanche, Okmulgee and Ottawa Counties, and light or noneconomic in all other areas surveyed. Survey omitted in 11 counties because of low infestations in 1959. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Moderate, widespread infestations on wheat and oats in Hunt County. (Davis).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Heavy infestations (up to 16 larvae per stalk) in extremely late grain sorghum in Brazos and Burleson Counties. (Newton).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEBRASKA - High adult populations observed in Greeley County on November 3 contained many sexual forms; 2 fields in Howard County with high populations contained sexual forms on November 10. (Bergman, Howe). Infestations moderate in Otoe, Gage and Lancaster Counties. Occasional aphids in plant crowns in Johnson County. Late fall buildup occurred in southeastern area. (Howe). OKLAHOMA - Populations increasing and infestations becoming more common in alfalfa in most areas of State. Counts ranged 20-40 per sweep in fields surveyed in Choctaw County, 10 per sweep in Johnston County, 5 per sweep in Tillman County and 6-10 per linear foot in Kay and Grant Counties. Also common in Bryan, Garvin, Kingfisher and Noble Counties. (Okla. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - NEBRASKA - Present in most southeastern area fields. (Bergman). UTAH - Continues active and numerous in alfalfa in Salt Lake and Weber Counties. (Knowlton). OKLAHOMA - Common, but light, in most alfalfa in most areas of State. (Okla. Coop. Sur.).

LYGUS BUGS - UTAH - Adults of unspecified species still present and active in fields of alfalfa at Murray and Granger, Salt Lake County. (Knowlton). ARIZONA - Lygus spp. averaged 15-20 per 10 sweeps in central area alfalfa. (Ariz. Coop. Sur.). TEXAS - Lygus spp. averaged up to 6 per sweep in alfalfa in Burleson and Brazos Counties. (Newton). MARYLAND - Lygus lineolaris adults averaged 40 per 50 sweeps on alfalfa at Glendale, Prince Georges County. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Averaged 3 per sweep in Burleson County alfalfa. (Newton). ARIZONA - Infestations continue to average 10-20 per 10 sweeps in central area alfalfa. (Ariz. Coop. Sur.).

CORN EARWORM (Heliothis zea) - TEXAS - Averaged 1-3 per sweep in alfalfa in Burleson and Brazos Counties. (Newton).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ARIZONA - Light in some alfalfa in Maricopa County. (Ariz. Coop. Sur.).

A COSMOPTERYCID (Walshia amorphella) - TEXAS - Forty acres of Madrid sweetclover in Navarro County reported 100 percent infested; stand apparently unaffected, but plants appeared to be very unthrifty. (Burleson). Survey to determine extent of infestation to be made in near future. (Texas Coop. Rpt.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Adults and larvae ranged light to medium on alfalfa in Howard and Prince Georges Counties. (U. Md., Ent. Dept.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - NORTH CAROLINA - Reported for first time in Northampton and Greene Counties during October. TENNESSEE - Reported for first time in Crockett County. (PPC, So. Reg.; Oct. Rpt.).

A CHINCH BUG (Blissus leucopterus insularis) - NORTH CAROLINA - Feeding on centipede grass on August 1 in Wake County. This is about 100 miles farther north than the species has previously been found. Det. by R. I. Sailer. (Jones).

#### FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on peach trees in Corning, Tehama County. (Cal. Coop. Rpt.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - TEXAS - Moderate to heavy infestations on peach trees in Waller County. (Turney).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - In chemical control zones in states of Nuevo Leon and Sonora, 59,948 citrus trees on 1,628 properties inspected during October, with 3 infested trees being found on 2 properties, located in Municipio Allende, Nuevo Leon. Infestations generally under good control in biological control zone in state of Tamaulipas by parasites. Insecticide treatments continued during October on infested trees in Neuvo Leon. (PPC, Mex. Reg.; Oct. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Throughout October, 2,240 traps located in 111 commercial citrus groves inspected and serviced. Of 7,400 trap inspections made, no A. ludens found. Other species of Anastrepha taken included 4 spatulata and 2 serpentina. Trap distribution included following counties: Cameron, Hidalgo, Starr, Willacy. (PPC, So. Reg.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Light on new citrus growth, generally; no damage at present, but occurrence this early is unusual in San Diego County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

CORN EARWORM (Heliothis zea) - NEW JERSEY - Severe infestations observed on lettuce in Atlantic County during late September and early October. (Guest).

BEEET ARMYWORM (Spodoptera exigua) - ARIZONA - Light infestations present on Maricopa County lettuce. (Ariz. Coop. Sur.).

A NOCTUID (Proxenus mindara) - CALIFORNIA - Damaging roots of beets in Salinas, Monterey County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Light to medium populations on Maricopa County cole crops. (Ariz. Coop. Sur.).



APHIDS - OKLAHOMA - Light to medium infestations of several species noted on turnips, cabbages and gourds in Choctaw and Tillman Counties. (Okla. Coop. Sur.).

MELON APHID (Aphis gossypii) - CALIFORNIA - Heavy on cantaloups in San Onofre, San Diego County. (Cal. Coop. Rpt.).

POTATO PSYLLID (Paratrioza cockerelli) - CALIFORNIA - Medium infestation on potato in Corona, Riverside County. (Cal. Coop. Rpt.).

A MITE (Siteroptes sp.) - CALIFORNIA - Medium adult infestation occurring on mushrooms in Chico, Butte County. (Cal. Coop. Rpt.).

#### COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - Inspections of gin trash and light traps during October in states of Sonora and Baja California negative. Light trap collections in state of Sinaloa also negative. At Culiacan, Sinaloa, squares, blooms, green bolls and open bolls inspected with negative results. In area along Conchos River between Julimes, Chihuahua, and the Rio Grande River, pink bollworm caused considerable damage in some cotton fields. (PPC, Mex. Reg.; Oct. Rpt.). Surveys in OKLAHOMA and TEXAS during October indicated that infestation is general but probably lighter than in 1959. (PPC, So. Reg.). ARIZONA - Infestation found in Coolidge area of Pinal County. This same area was infested in 1959. (Ariz. Coop. Sur.).

BOLL WEEVIL (Anthonomus grandis) - MEXICO - Populations generally heavy along Conchos River between Julimes, Chihuahua, and Rio Grande River during October. (PPC, Mex. Reg.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PHYCITID (Ephesiodes gilvescentella) - CALIFORNIA - Heavy populations in seed cones of Picea sp. in a nursery in Fremont, Alameda County. (Cal. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - OREGON - Very abundant on spruce trees in a Portland nursery and causing tip injury. (Hemmerling).

A SYCAMORE BORER (Ramosia resplendens) - CALIFORNIA - Heavy in sycamore trees in Riverside, Riverside County, and live oak in Redwood City, San Mateo County. (Cal. Coop. Rpt.).

FALL CANKERWORM (Alsophila pomataria) - CONNECTICUT - Male and female moths abundant in New Haven and Fairfield Counties; egg laying heavy on oaks and buildings. (Johnson).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - ARKANSAS - Larvae of this species and Datana sp. (probably D. contracta) caused almost complete defoliation of various species of oaks in small area of Columbia County during October. Reports indicate that an area of several thousand acres of oaks defoliated in Little River County, probably by H. manteo. (Ark. Ins. Sur.).

LINDEN LOOPER (Erannis tiliaria) - CONNECTICUT - Male and female moths abundant in elm, oak and other trees. (Johnson).

MITES - CALIFORNIA - Aceria fraxinivorus populations heavy on Fraxinus sp. in Piedra, Fresno County, and causing "spangle gall". Heavy populations of Brevipalpus lewisi occurring on Chinese magnolia in Oroville, Butte County. (Cal. Coop. Rpt.).

A NYMPHALID (Agraulis vanillae) - CALIFORNIA - Heavy populations on ornamental passionvines in Rodeo, Contra Costa County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Myzocallis kahawaluokalani medium on Lagerstroemia indica in Hanford, Kings County. Eriosoma sp. (probably E. lanigerum) heavy on pyracantha in San Diego, San Diego County. (Cal. Coop. Rpt.). MARYLAND - Lachnus salignus noticeable on willow trees in Anne Arundel and Prince Georges Counties. (U. Md., Ent. Dept.).

COCCIDS - CALIFORNIA - Phenacaspis pinifoliae heavy on mugho pine (Pinus mugo) in a nursery in Paradise, Butte County. Aspidiotus perniciosus heavy on Ceanothus sp. in Yuba City, Sutter County. Heavy adult populations of Coccus hesperidum on pelargonium leaves in Red Bluff, Tehama County. (Cal. Coop. Rpt.).

A WHITEFLY (Trialeurodes sp.) - WYOMING - Infesting greenhouses in Albany and Laramie Counties. (Fullerton).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - Three new infestations were reported; 1 each from East Carroll, West Carroll and Rapides Parishes. (Spink). OKLAHOMA - Infestations continue to be noted in Choctaw County livestock. (Okla. Coop. Sur.).

Current Screw-worm Situation Report - Week Ending November 27, 1960

State	Cumulative Totals - 1960		Counties or Parishes	
	Cases	Premises		
Alabama	1	1	Geneva	
Arkansas	53	40	Chicot Desha Ashley Crawford	Sevier Drew Faulkner
Florida	1	1	Hillsborough	
Louisiana	215	107	Richland Red River Franklin Rapides De Soto Ouachita Natchitoches	Caldwell Madison West Carroll East Carroll Catahoula La Salle Tensas
Mississippi	98	50	Issaquena Sharkey Sunflower	Washington Leflore Warren
Totals	368	199	29	

Date Last Case Reported This Year: Alabama - 8-30-60; Arkansas - 11-25-60; Florida - 10-7-60; Louisiana - 11-25-60; Mississippi - 11-18-60.

Screw-worm Cases Intercepted at Inspection Stations: 1958 - 8; 1959 - 6; 1960 - 34 to date.

(Anim. Dis. Erad. Div.).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Larvae becoming more common in backs of cattle in most areas of State. (Okla. Coop. Sur.).

LICE - UTAH - In Sanpete County, 2,000 beef cattle dipped for control in Manti area and 2,700 head of cattle treated for control in Gunnison Valley area. (Knowlton). WYOMING - Solenopotes capillatus infesting beef cattle near Wheatland, Platte County. (Fullerton). OKLAHOMA - Unidentified species medium to heavy on some cattle in Woodward, Payne, Cherokee, Muskogee and McCurtain Counties. Haematopinus suis common on hogs checked in Johnston County. (Okla. Coop. Sur.).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - Medium to heavy on cattle checked in McCurtain and Johnston Counties. Averaged 15 per cow and ranged 2-100 per calf in herd of 170 cattle checked in Johnston County. (Okla. Coop. Sur.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - SOUTH CAROLINA - Infestations found in Lexington and Richland Counties for first time. ALABAMA - Injury to humans reported; one child hospitalized because of severe stings at Tuscaloosa and farmer severely stung near Auburn. (PPC, So. Reg.; Oct. Rpt.).

#### STORED-PRODUCT INSECTS

PINK SCAVENGER CATERPILLAR (Pyroderces rileyi) - TEXAS - Heavy, local infestation in stored ear corn in Bowie County. (Lynch).

INDIAN-MEAL MOTH (Plodia interpunctella) - OREGON - Infesting stored walnuts and cereals in Salem area. (Capizzi).

FLOUR BEETLES (Tribolium spp.) - SOUTH DAKOTA - T. castaneum infesting stored grain in Beadle County. (Mast). NEW MEXICO - Light to exceptionally heavy populations of T. castaneum and T. confusum found in stored grain in Dona Ana County. (N. M. Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - OKLAHOMA - Common in farm stored grain in Beaver County. (Okla. Coop. Sur.).

DERMESTIDS (Trogoderma spp.) - NEW MEXICO - All specimens collected during recent khapra beetle surveys have been determined as not T. granarium. (N. M. Coop. Rpt.).

#### BENEFICIAL INSECTS

PREDATORS - OKLAHOMA - Hippodamia convergens common but very light in alfalfa and small grains checked in southern half of State, with Nabis spp. present in limited numbers. Chrysopa spp. present in limited numbers in less than half of fields checked in same area. (Okla. Coop. Sur.).

A TACHINID (Voria ruralis) - ARIZONA - Probably this species parasitizing 45-50 percent of cabbage looper larvae on Maricopa County cole crops. Parasites averaged 3 per larva. Only late-instar larvae affected. (Ariz. Coop. Sur.).

A TRICHOGRAMMATID (Megaphragma mymaripenné) - CALIFORNIA - Percentage of parasitism in egg blisters of greenhouse thrips (Heliothrips haemorrhoidalis) quite high on avocado leaves in Vista, San Diego County. Det. by E. I. Schlinger. (J. A. McMurtry).

MISCELLANEOUS INSECTS

PEA WEEVIL (Bruchus pisorum) - CALIFORNIA - Medium infestation in wild pea seeds in Napa, Napa County. (Cal. Coop. Rpt.).

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Continues a nuisance in homes throughout eastern half of State. (Okla. Coop. Sur.).

CLOVER MITE (Bryobia praetiosa) - NEBRASKA - Becoming numerous in some homes in Lincoln. (Bergman).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
<b>ARIZONA</b>							
Mesa 11/14-20			18		11		1
<b>LOUISIANA</b>							
Baton Rouge 11/18-22	24	14	3		1	18	1
<b>NEBRASKA</b>							
North Platte 11/3-14	10			62	6		1
<b>SOUTH CAROLINA</b>							
Charleston 11/14-20	40		1	58		24	11
Clemson 11/7-13	29	2		34		7	8
<b>TEXAS</b>							
Brownsville 11/12-18	54	55	2	44		21	3
Waco 11/19-25	84		14	4	51	19	
<b>WISCONSIN</b>							
Madison 11/12-19	7					2	
Middleton 11/12-16	3			3		3	

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported September 30 by the Plant Quarantine Division, ARS, USDA, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month of September. They do not necessarily represent interceptions taken during the month, but do include any of interest from recent months that were not previously reported.

PINK BOLLWORM (Pectinophora gossypiella) 5 times in baggage, including one each for Virginia and Texas destinations; from Cuba at Norfolk, Virginia; from Hawaii at Honolulu, Hawaii; from Mexico at Laredo, Texas; and from Jamaica and Brazil, respectively, at New York, New York.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 10 times; at Honolulu 7 times in baggage and mail destined for California (6) and Oregon (1); at New York one time in fresh Lebanese cherries destined for Venezuela; and at San Pedro, California, 2 times in baggage for California.

A STENOMID (Stenoma catenifer Wlsm.) in baggage from Honduras at San Pedro.

KHAPRA BEETLE (Trogoderma granarium) 22 times; including 13 in stores, 1 in mail, 7 in cargo and 1 in ship's hold; at San Pedro 4 times in stores; at Philadelphia, Pennsylvania, one time in stores; at Detroit, Michigan, one time in stores; at Seattle, Washington, one time in mail destined for Oregon; at Chicago, Illinois, one time in ship's hold; at Wilmington, Delaware, 2 times in stores; at New York 7 times in gum and ginger cargo for New York, Ohio and foreign destinations; and at Houston, Texas, 5 times in stores, with one in vermiculite ore.

BRUCHIDS (Bruchus spp.) - B. tristis Boh. 4 times, B. signaticornis Gyll. 14 times, B. lentis Froel. 9 times and B. ervi Froel. 12 times in lentils, Lathyrus and vetch in baggage, stores and cargo from the Mediterranean area destined for Massachusetts, New York, Ohio, Michigan, Illinois and New Jersey; at New York 36 times, collectively; at Boston, Massachusetts, 2 times; at Charleston, South Carolina, one time; and at Washington, D. C., one time.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 8 times for New Jersey, Louisiana and other destinations; at New Orleans, Louisiana, 2 times with cargo; at San Juan Puerto Rico, one time in small cargo of herbs from Spain; at Norfolk one time with cargo; and at New York 4 times with cargo.

YELLOW PEACH MOTH (Dichocrocis punctiferalis Guen.) in Nephelium lappaceum fruit in baggage destined for California from Malaya at Honolulu.

A FRUIT FLY, probably Dacus cucurbitae Coq., in airplane stores destined for California at Honolulu.

A TERMITE (Heterotermes convexinotatus (Snyder)) (an injurious neotropical species) with mangoes in baggage from Martinique at San Juan.

PEACH FRUIT MOTH (Carposina niponensis Walsingham) in stores from Japan at Wilmington.

A FRUIT FLY, probably Dacus dorsalis Hend., in fruit in baggage for California at San Diego, California.

A FRUIT FLY (Anastrepha sp., possibly fraterculus (Wied.)) in quince fruit in baggage from Peru at Miami, Florida.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) in stores for Canada and in baggage destined for New Jersey from Italy and Germany, respectively, at New York.

GIANT AFRICAN SNAIL (Achatina fulica Bowdich) at Honolulu in baggage destined for Washington.

A PHYCITID (Cryptoblabas gnidiella (Mill.)) on oleander cuttings in baggage from Bermuda at Washington National Airport, Arlington, Virginia.

MEXICAN FRUIT FLY (Anastrepha ludens) 10 times, including 9 in baggage from Mexico, with 4 for California destinations; at Laredo, Texas, 4 times; at El Paso, Texas, one time; at Nogales, Arizona, one time; at San Ysidro, California, one time; at Eagle Pass, Texas, 2 times; and at New Orleans one time in stores from Guatemala.

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#### HAWAIIAN INSECT NOTES

Dr. Dale Habeck exhibited naiads of an EPHEMERID (Caenis nigropunctata) which were collected at Moanalua Gardens, Honolulu, on November 1, 1960. Although adults have been collected frequently, these are apparently the first naiads to be collected in Hawaii. Mr. J. Balock reported observing a pupa of a MANGO-SEED WEEVIL (Sternochetus mangiferae) in pulp of a mango fruit. This is unusual, as pupation usually occurs in the seed.

Mr. J. Beardsley reported the following new island records, based on material collected by him on Molokai on October 20-21: At Mapulahu, RHODES-GRASS SCALE (Antonina graminis) on Bermuda grass; an ENCYRTID PARASITE (Anagyris antoninae) reared from Rhodes-grass scale; another ENCYRTID (A. swezeyi) reared from Cynodon sp., and presumably parasitic on a COCCID (Trionymus rostellum) which was also present; a third species of ENCYRTID (Dusmetia sangwani) was reared from Rhodes-grass scale; a SCALE INSECT (Odonaspis ruthae) was collected on Bermuda grass; at Kaunakakai, TOBACCO BUDWORM (Heliothis virescens) was collected at a light.

Mr. Beardsley also reported that he had recently reared large numbers of an ENCYRTID (Gahaniella sp.) from a COCCID (Saissetia nigra) collected on Hibiscus twigs at his home in Wailupe Valley, Oahu. The specimens were determined by P. H. Timberlake, who wrote that the known species of the genus are considered hyperparasitic in habit, but doubts that the Hawaiian form belongs to any of the 3 described species of Gahaniella. He was unable to compare them with specimens of G. saissetiae as the types are in the U. S. National Museum. This is a new insect record for Hawaii.

Mr. Beardsley reported that approximately 700 adults of a BRACONID PARASITE (Aphidius smithi) of Macrosiphum pisi had been received by the Entomology Department of the H. S. P. A. experiment station. These parasites were liberated in fields of alfalfa at Kekaha, Kauai, and at Ewa, Oahu, where M. pisi has, on occasion, developed damaging populations. A. smithi is native to India and is now established in California, where it shows promise in combating this aphid in alfalfa. (Hawaiian Entomological Society, November 14, 1960, meeting).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

MELON STEM BORER (Apomecyna binubila Pascoe)

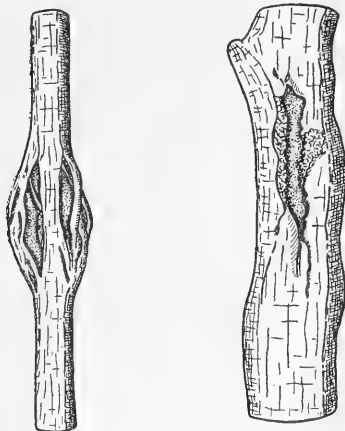
Economic Importance: Although cerambycids are generally wood borers, certain members of this genus prefer the more succulent stems of cucurbitaceous plants.

The larvae of Apomecyna binubila are sometimes serious pests of melons in Sudan. Cucurbits are also damaged in some areas of South Africa. Feeding by adults is negligible but larval damage to stems may be extensive.

Distribution: Sudan (between 12° and 20° latitude), South Africa (Natal and Eastern Cape Province).

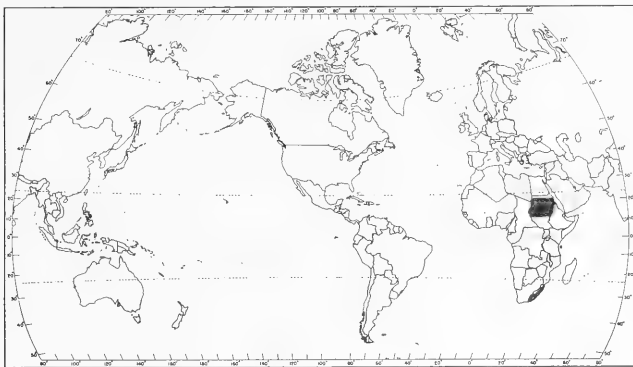
Hosts: Cucurbits, including watermelon and pumpkin.

Life History and Habits: Adult is inactive, seldom flies. Females deposit eggs in melon stems. Oviposition sites become covered with a dark brown exudate. The eggs hatch in about 4 days, and the larvae feed in the stems, apparently passing through six instars. Their presence leads to splitting, cracking, and discoloration of stems and dying of leaves. In high infestations there may be as many as five or more larvae per four inches of stem. Such an infestation at the base of the plant will kill the plant. The larval period lasts about 25 days and pupation takes place within tunnels in the stems.



1 cm

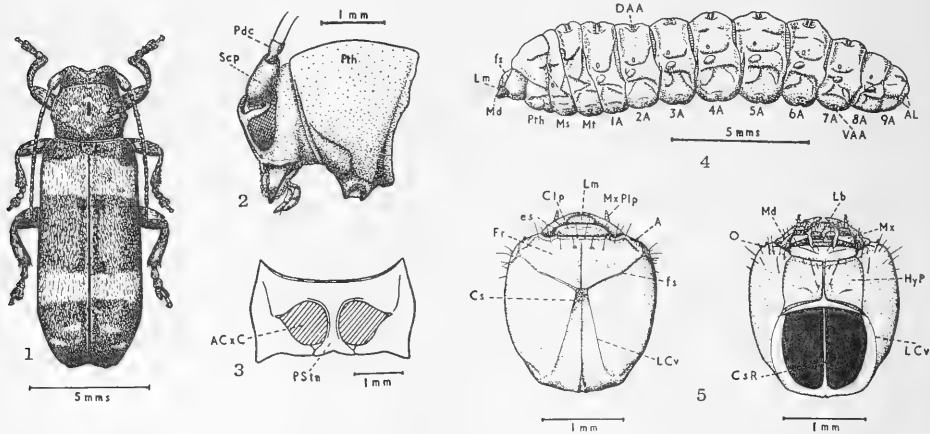
Larval Damage to Melon Stems



General Distribution of Apomecyna binubila

The life cycle in Sudan requires about 35 days. Breeding may be continuous in this area but a winter diapause is reported in South Africa.

**Description:** ADULT elongate, slightly depressed. Length, 10-12.5 mm. Dark brown, shining, covered by dense white and yellow-brown decumbent pubescence; coarsely to finely serially punctate. Dark brown body gives gray appearance to areas covered by white pubescence and dark yellow-brown appearance to regions overlaid by yellow-brown hairs. (See illustration). Antennae filiform, extending two-thirds length of body; 11-segmented. Full-grown LARVA cylindrical, tapering slightly anteriorly and posteriorly. Soft white or whitish-yellow with sparse covering of thin yellow setae. Average length about 17 mm. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).  
CEIR 10(49) 12-2-60.



Figures of *Apomecyna binubila* Pascoe: 1 - Adult, lateral aspect. 2 - Head of adult, lateral aspect. 3 - Prothorax of adult, ventral aspect. 4 - Larva. 5 - Head of larva, dorsal and ventral aspects. Abbreviations used: (A) antenna; (1A)-(9A) abdominal segments; (ACxC) anterior coxal cavity; (AL) anal lobes; (Clp) clypeus; (Cs) coronal suture; (CsR) coronal ridge; (DAA) dorsal ambulatory ampulla; (es) epistomal suture; (Fr) frons; (fs) frontal suture; (HyP) hypostomal plate; (Lb) labium; (LCv) line of attachment of neck membrane; (Lm) labium; (Md) mandible; (Ms) mesothorax; (Mt) metathorax; (Mx) maxilla; (MxPlp) maxillary palp; (O) ocellus; (Pdc) pedicel of antenna; (PStn) prosternum; (Pth) prothorax; (Scp) scape of antenna; (VAA) ventral ambulatory ampulla.





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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

GREENBUG, first collected in Oklahoma in late October (CEIR 10(46):1075) and reported in 22 of 25 panhandle counties surveyed in Texas (CEIR 10(47):1087), now becoming increasingly common in all parts of Oklahoma. APPLE GRAIN APHID increasing in numbers and more common than a few weeks ago throughout Oklahoma. (p. 1123).

CITRUS INSECT situation in Florida. (p. 1124).

Some BOLL WEEVIL hibernation surveys - fall 1960. Average counts this fall exceed those of the 1959 survey in each reporting state. (p. 1125).

INSECT DETECTION: European corn borer found for first time in Habersham, Union and White Counties, Georgia. (p. 1123).

INSECTS not known to occur in the United States. (p. 1129).

MORMON CRICKET adult survey - fall 1960 (map). (See end of report).

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WEATHER BUREAU 30-DAY OUTLOOK

DECEMBER 1960

The Weather Bureau's 30-day outlook for December calls for temperatures to average below seasonal normals over the eastern half of the Nation and in the Northern Plains, with greatest departures over the lower Mississippi and Ohio Valleys. Above-normal temperatures are predicted over the southern Rocky Mountain and Plateau States, with near normal in adjacent areas. Precipitation is expected to exceed normal in Pacific Coast States, as well as over the Great Lakes region and the Atlantic seaboard, with early season snows in more northerly portions. Subnormal precipitation is expected over the Southern and Central Plains and middle Mississippi Valley, while near-normal amounts are indicated for unspecified areas.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING DECEMBER 5

This week was about 10° to 15° colder than last week in the Midcontinent and Southeast and a few degrees colder over most of the remainder of the Nation.

The intense storm over the Great Plains at the end of the previous period moved northeastward across Lake Superior into Canada on the 29th. On the 28th, high winds which reached speeds of 72 m.p.h., at Duluth, Minnesota, caused considerable damage to property along the north shore of Lake Superior. The storm was followed by an inflow of cold air which covered most of the Nation by November 30 and brought the coldest weather of the fall and winter season to date to many areas east of the Rocky Mountains. Temperatures fell to subzero levels in the North Central Interior as far south as Nebraska and Iowa. Parshall, North Dakota, and Valentine, Nebraska, reported lows of -24° and -7°, respectively, on November 30; and Bemidji, Minnesota, had -19° and Audubon, Iowa, -5° on December 1. As the extensive cold air mass moved slowly southeastward during the remainder of the week, freezing occurred at Lake Charles and New Orleans, Louisiana; Mobile, Alabama; and Tallahassee and Jacksonville, Florida.

On December 4, another storm moved out of the Rockies into the central Great Plains, where it gained strong intensity and produced the second blizzard within a week in the northern Great Plains. This latter storm was preceded by a rapid rise of temperatures in the Midcontinent region the last 2 days of the period, with maxima in the 50's as far north as Nebraska, Iowa, and southern portions of Wisconsin and Michigan. However, cool, dry, sunny weather still prevailed in the East. Total precipitation for the week exceeded 1/2 inch along the west coast, in most of the Mississippi and Ohio Valleys and Northeast, and parts of the northern Great Plains. Precipitation was very light in southern areas east of the Rocky Mountains, and in some areas of the Southeast soil moisture is short. Some areas of Georgia have had less than 1 inch of rain during the last 2 months.

A storm, with hurricane-force winds along the central and north coast of California and up to 50 m.p.h. elsewhere in the State, brought heavy precipitation to the Pacific States and some other parts of the Far West about the middle of the week. Totals for the week ranged from 2 to 7 inches in northern California and 1 to over 2 inches along the central and south coast. Totals exceeded 2 inches in southwestern Oregon, and were about an inch along the north coast of Oregon and coastal areas of Washington. Weekly totals were less than 1/2 inch in most interior areas, but Utah and northern Nevada reported beneficial amounts, nevertheless. The mountain snowpack was increased in Utah, and more snow fell in the Cascades, where depths range from 50 to 60 inches at elevations above 3,000 feet. Weekend snows in the higher mountains of New Mexico ranged up to 12 inches.

(Weather continued on page 1128).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Light infestations becoming increasingly common in many fields in all parts of State. Populations show gradual increases over those noted during past few weeks, but continue light (very few infestations exceeding 10 per linear foot) and somewhat scattered in all areas. Damaging numbers have been found in only one field so far this fall; this field is located in the Hennessey area, Kingfisher County. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Continued common in light numbers in many fields of small grain checked throughout State, but not as plentiful as a few weeks ago. (Okla. Coop. Sur.). ARIZONA - Medium to heavy populations present on barley in Yuma County. (Ariz. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Light numbers (up to 10 per linear foot) common in fields of small grain in many areas. This is probably the most widespread aphid species in small grain in north central area at present. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Increasing in numbers and much more common than a few weeks ago in all parts of State. Light infestations (up to 25 per linear foot) present in scattered fields of small grain throughout north central area. Counts in infested fields checked in other areas of State averaged 5 per linear foot or less. (Okla. Coop. Sur.).

APHIDS - NORTH CAROLINA - Unidentified species feeding on oats in Duplin County; have nearly destroyed one 10-acre field. (Federonko, Nov. 25). OKLAHOMA - Populations of Rhopalosiphum rufiabdominalis continued in fields previously reported infested in Okfuskee County, and have been noted in some additional fields of small grain in same area. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - GEORGIA - Survey revealed Habersham, Union and White Counties to be newly infested counties. (Blasingame et al.).

A CUTWORM - OKLAHOMA - Limited numbers of early-instar larvae of undetermined species noted in a few fields of small grain checked in Kingfisher and Blaine Counties. (Okla. Coop. Sur.).

A WHITE GRUB - OKLAHOMA - Unidentified species causing some damage to wheat in localized areas of Cotton County. (Okla. Coop. Sur.).

A WIREWORM - OKLAHOMA - Unidentified species damaging some fields of wheat in localized areas of Cotton County. (Okla. Coop. Sur.).

HESSIAN FLY (Phytophaga destructor) - NEBRASKA - Moderate to heavy infestation of flax-seed stage found in several fields in Furnas County. (Roselle).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Light numbers appearing in isolated fields of small grain in widely scattered areas of the State. (Okla. Coop. Sur.).

A RICE DELPHACID (Sogata orizicola) - LOUISIANA - Surveys begun in May to determine presence of this species in fields of rice in the State have been completed, with negative results. Most of these fields were surveyed several times during the summer, resulting in a total of 345,600 acres examined. Survey was conducted by PPC and State personnel. (Spink).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Light to medium infestations noted in Garvin and Harper Counties. (Okla. Coop. Sur.). ARIZONA - An increase in numbers has occurred in Yuma County and in Theba area of western Maricopa County. However, infestations appear to be declining because of disease which is very common at this time. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - TEXAS - Adults averaged 3-5 per 5 sweeps in alfalfa in Burleson County. (Newton).

WESTERN YELLOW-STRIPED ARMYWORM (*Prodenia praefica*) - CALIFORNIA - Medium infestation of this species and *Estigmene acrea* present on alfalfa in Atascadero, San Luis Obispo County. (Cal. Coop. Rpt.).

FALL ARMYWORM (*Laphygma frugiperda*) - OKLAHOMA - Continues to infest some fields of alfalfa and small grain checked in Harper County. (Okla. Coop. Sur.).

BEEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Light infestations averaging 2 per 10 sweeps present in alfalfa in southwest and central areas. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEW JERSEY - An unusual situation with regard to population present in Sussex and Warren Counties. Larval counts were 2-10 per sweep through August, with an increase (10-12 per sweep) noted in September and persisting through October. On November 2, a field near Blairstown (Warren County), previously not sampled, averaged 36.5 larvae per sweep. Many adults were also collected and eggs were found in stems. Injury to this field was visible from the road and similar to what would be expected during May and June. (L. W. Coles).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - NORTH CAROLINA - Results of survey indicate infestation to be in a comparatively concentrated area, with very little extension, in Sampson County. Found in 3 locations in county; one apparently an extension of old, previously treated Duplin County infestation. (Morgan). Infestation found on 250 acres in Faison area, Duplin County. (Federonko).

A MIRID - TEXAS - Heavy infestations of undetermined species present in flax in Bee and Live Oak Counties. (Edgar).

#### FRUIT INSECTS

WESTERN PEACH TREE BORER (*Sanninoidea exitiosa graefi*) - CALIFORNIA - Medium infestation present in peach trees in Meiners Oaks, Ventura County. (Cal. Coop. Rpt.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - GEORGIA - Heavy infestation in commercial peach orchard in Dooly County. (Snapp, Nov. 21).

NAVEL ORANGEWORM (*Paramyelois transitella*) - CALIFORNIA - Medium in pomegranate fruit in Norco, Riverside County, and in orange fruit in Merced, Merced County. (Cal. Coop. Rpt.).

COTTONY-CUSHION SCALE (*Icerya purchasi*) - ARIZONA - Light infestation in a 40-acre lemon grove in Yuma County is being destroyed by natural vedalia population. Very few live scales can be found at present time. (Ariz. Coop. Sur.).

YUMA SPIDER MITE (*Eotetranychus yumensis*) - ARIZONA - Light to medium in many Yuma County citrus groves. Damage generally not heavy, but considerable fruit damage occurring in a few cases, particularly on tangerines. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - Mid-November - PURPLE SCALE (*Lepidosaphes beckii*) infested 59 percent of groves checked. Activity, generally, will remain low in all districts. A few groves may develop moderate infestations. FLORIDA RED SCALE (*Chrysomphalus aonidum*) infested 72 percent of groves. Activity expected to take downward trend next week, but will be in high range until end of November. Populations, generally, will be near average level during next month. High activity present in upper east coast, Indian River, Bartow, Ridge and west coast districts. CITRUS RED MITE (*Panonychus citri*) infested 55 percent of groves. Activity will continue to increase during next month. Although statewide population is not expected to rise to average level by end of November,



increasing numbers of groves will develop troublesome infestations. High activity is present in Orlando, Bartow and upper east coast districts. CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 81 percent of groves. Peak fall activity is expected within a week and activity will continue in high range during next month. Populations are above average at present and will increase. A majority of groves now have economic infestations. High activity present in Bartow, Gainesville, west coast, Orlando, Brooksville and Indian River districts. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 25 percent of groves. Populations will increase moderately during the coming month. This mite will be about as abundant as during 1959, but will not be a general problem. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

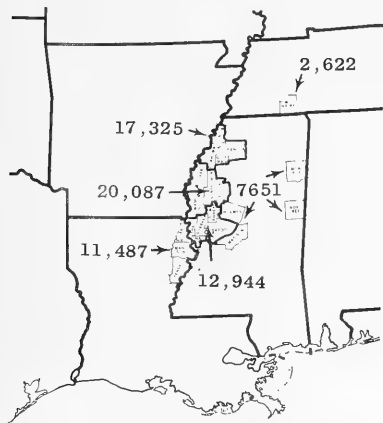
PECAN WEEVIL (*Curculio caryae*) - TEXAS - Moderate to heavy larval infestations, probably this species, present in new pecans in Seguin area, Guadalupe County. (Texas Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - NORTH CAROLINA - Injuring pecans in Richmond County. (Lewis, Farrier).

### COTTON INSECTS

#### SOME BOLL WEEVIL HIBERNATION SURVEYS - FALL 1960

Collections of surface trash samples (two square yards per sample) have been completed in three cotton-producing states during the fall of 1960 by cooperating State and Federal agencies to determine the number of boll weevil (*Anthonomus grandis*) adults that went into hibernation during the same period. Average counts this fall exceed those of the 1959 survey in each reporting state. The counts indicate only a potential, the degree of infestation in 1961 depending largely on weather and other factors that will affect the weevils during the winter, spring and summer of 1961. In addition, spring surveys are normally conducted in the same locations where the fall surveys were conducted to determine the percentage of weevils that survive the winter.



LOUISIANA - Collections of surface ground trash samples were made November 8 through 28 in the northeastern area composed of Madison, East Carroll and Tensas Parishes. Three samples were collected at 5 locations each in East Carroll and Tensas Parishes and 20 locations in Madison Parish, for a total of 30 locations and 90 samples. The average number of weevils per acre was 6,860 in Madison Parish, 13,235 in East Carroll Parish and 14,365 in Tensas Parish, with a 3-parish area average of 11,487, compared with 8,097 for 1959 and 5,756 for 1958. Similar records have been made in Madison Parish for the past 25 years. Only in 1955 has a larger number of boll weevils been found in ground trash in that Parish than the 6,860 per acre found in the fall of 1960. (Smith et al.)

MISSISSIPPI - Collections of trash samples were begun November 14 and completed November 22. Three samples were taken from each location and either 7 or 8 locations were sampled in each area.

Wherever possible, samples were taken from locations that could be sampled again in the spring of 1961. The State was divided into 4 areas, with 4 counties per area, as follows: 1 - Lower delta (Sharkey, Issaquena, Yazoo, Humphreys Counties); 2 - Central delta (Washington, Bolivar, Sunflower, Leflore Counties); 3 - North delta (Coahoma, Tunica, Quitman, Panola Counties); and 4 - Hill section (Holmes, Madison, Noxubee, Monroe Counties). Ninety samples were taken from a total of 30 locations in each of three areas. Due to bad weather and for other reasons, only 15 samples were collected from Quitman County rather than the usual 21, resulting in a total of 354 samples for the State. The average number of weevils per acre for areas 1, 2, 3 and 4 was 12,944, 20,087, 17,325 and 7,651, respectively. The average number in the respective areas in the fall of 1959 was 4,215, 8,513, 4,787 and 2,991. The 1960 state average was 14,502 live weevils per acre, compared with 5,127 in 1959, 3,792 in 1958, 6,715 in 1957 and 2,091 in 1956. (Merkl et al.).

TENNESSEE - A survey was made in McNairy County to determine boll weevil population that went into hibernation this fall as this county usually represents the infestation of southern counties. Samples of woods trash were taken in environs of fields known to have been infested this season. A total of 12 samples was taken. The average number of weevils per acre was 2,622, compared with 1,882 in 1959 and 1,214 in 1958. This is the highest number of weevils ever taken in the fall trash examination. The average percent of survival in the State for the past 9 years is 35. As there is a relatively large number of weevils in hibernation at this time, a mild winter will probably result in there being a rather large number of weevils to infest fields in the spring of 1961. (Locke).

BOLL WEEVIL (Anthonomus grandis) - ILLINOIS - Collected at McClure, Alexander County, on October 29 in what is believed to be the northernmost cottonfield in the Nation this year. Late bolls were heavily infested but there was little evidence of damage to the crop. Three other fields examined between Olive and Cairo, in the same county, were also infested. (S. E. Jones).

PINK BOLLWORM (Pectinophora gossypiella) - LOUISIANA - Program conducted by PPC personnel has now been completed and resulted in the finding of 3 specimens in the State; 2 in De Soto Parish and 1 in Sabine Parish. (Spink).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

LOGGEPOLE NEEDLE MINER (Recurvaria milleri) - CALIFORNIA - Controls programmed for this species and Dendroctonus monticolae for several years in lodgepole forests surrounding Tuolumne Meadows in Yosemite National Park have been successful. It is believed that control measures as planned can be completed in 1961 and prospects for preserving the trees in the area are most encouraging. (R. H. Sharp).

SPRUCE BUDWORM (Choristoneura fumiferana) - CALIFORNIA - Damaged white fir foliage apparently caused by an early infestation of this species. This will be confirmed in the spring of 1961 in a 2,000-acre white fir stand in Rush Creek area, Modoc County. Only present known occurrence in State is in Warner Mountain range. (U. R. Osborn, C. B. Eaton).

PINE WEBWORM (Tetralopha robustella) - VIRGINIA - Local medium infestation on loblolly pine near Cullen, Charlotte County, occurring in association with Rhyacionia sp. reported in CEIR 10(48):1101. (Morton, Tarpley, Nov. 28).

A PINE TIP MOTH - TEXAS - Heavy infestations on 3-year-old loblolly pines in southern Angelina County. (Texas For. Pest Comm., Oct. Rpt.).

JEFFREY PINE BEETLE (Dendroctonus jeffreyi) - CALIFORNIA - Outbreak causing complete kill of 65 Jeffrey pines in 300-acre stand in Mt. Waterman area of

Angelus National Forest. This is in Winston Spring sale area, where fire caused considerable damage last season. (R. Thiebaud).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Activity greatly decreased. Only 2 known spots contained active broods; controls applied to both. (Texas For. Pest Comm., Oct. Rpt.).

A JUNE BEETLE (Polyphylla variolosa) - VERMONT - Larvae present in the State nursery at Essex Junction, Chittenden County. A quarter of an acre is involved, with a loss of approximately 200,000 seedlings. (Walker, Pratt; Nov. 28).

AN APHID (Lachnus salignus) - MARYLAND - Populations have been heavy on willows during November at many localities in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). VIRGINIA - Heavily infesting weeping willow in Newport News and in King George County. (Stump, Hall, Tarpley; Nov. 28).

A SCALE INSECT (Mycetococcus ehrhorni) - CALIFORNIA - Medium on oaks in Grover City, San Luis Obispo County. (Cal. Coop. Rpt.).

A FALSE SPIDER MITE (Brevipalpus cardinalis) - CALIFORNIA - Medium on ash trees in the Lancaster area of Los Angeles County. (Cal. Coop. Rpt.).

A SPIDER MITE (Schizotetranychus celarius) - CALIFORNIA - Heavy on several species of bamboo in Carmel Valley, Monterey County. (Cal. Coop. Rpt.).

#### INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Larvae common in backs of cattle throughout State; averaged 3 per animal on limited number of 500-pound calves checked in Noble County. (Okla. Coop. Sur.). NEW MEXICO - Larvae of various sizes being found in backs of range cattle in Silver City area, Grant County. Several animals found from which larvae had penetrated skin and dropped to ground. (N. M. Coop. Rpt.).

SCREW-WORM (Callitroga hominivorax) - LOUISIANA - One new infestation reported from Red River Parish. (Spink).

A HIPPOBOSCID (Lipoptena sp.) - TEXAS - Counts on 4 deer killed in Brazos and Grimes Counties ranged 100-500 per animal. (Newton).

LICE - OKLAHOMA - Medium to heavy infestations of unidentified species noted on cattle checked in Cleveland, Bryan, Choctaw and Pushmataha Counties. Haematopinus suis medium to heavy on some hogs checked in Bryan and Choctaw Counties. (Okla. Coop. Sur.). UTAH - Some beef herds in Cache and Weber Counties have been treated for control of lice. (Knowlton).

BEDBUG (Cimex lectularius) - VIRGINIA - Heavy infestation present in a house trailer in Blacksburg, Montgomery County. (Rowell, Nov. 21).

TICKS - OKLAHOMA - Dermacentor albipictus common on livestock checked in Sequoyah, Pushmataha and Choctaw Counties; averaged 11 engorged females per animal on 80 cows checked in Pushmataha County. Heavy on deer killed during hunting season on Fort Sill military reservation. (Okla. Coop. Sur.). NEW MEXICO - Dog owners in several areas of State report infestations of Rhipicephalus sanguineus on animals; also a nuisance in and around homes. (N. M. Coop. Rpt.).

MISCELLANEOUS INSECTS

A POWDER POST BEETLE (Lyctus africanus) - CALIFORNIA - Heavy infestation in bamboo curtains occurred in a home in El Sobrante, Contra Costa County. This is one of several bamboo borers which have been found infesting dry bamboo imports. They appear to remain closely attached to dry bamboo and have not otherwise become a problem. (Cal. Coop. Rpt.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - NORTH CAROLINA - Found on 2 properties in Brunswick County, week of November 10. (Bowen).

BROWN-BANDED ROACH (Supella supellectilium) - MARYLAND - Very abundant in several row houses at Baltimore. (U. Md., Ent. Dept.). VIRGINIA - Heavy in a home in Roanoke, Roanoke County. (Rowell, Nov. 19).

ANTS - MARYLAND - Winged forms of Tetramorium caespitum abundant in new building at Princess Anne, Somerset County; workers of Lasius interjectus numerous under garage at Owings Mills, Baltimore County. (U. Md., Ent. Dept.).

CORRECTIONS

CEIR 10(47):1092 - TICKS - OKLAHOMA - Dermacentor albopictus should read Dermacentor albipictus.

CEIR 10(49):1116 - LIGHT TRAP COLLECTIONS - SOUTH CAROLINA - Delete Clemson entry.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
ARIZONA							
Mesa 11/21-26			7		4		
FLORIDA							
Quincy 11/22, 28	2	2		1		4	6
Monticello 11/22-29				1		1	
LOUISIANA							
Baton Rouge 11/25-12/1	22	4		1		4	
NEBRASKA							
North Platte 11/18-26	2			64	7		
SOUTH CAROLINA							
Charleston 11/21-27	31	1	5	73		64	12
Charleston 11/28-12/4	2			23		17	1

\*\*\*\*\*

(Weather continued from page 1122)

General precipitation which fell in the eastern half of the Nation the first 2 days of the week, was mostly snow in the northern areas, with falls of 8 to 14 inches in the upper portions of Minnesota, Wisconsin, and Michigan, and 6 to 8 inches on the western slopes of the Appalachians in Pennsylvania and West Virginia. On the 30th, moderate to heavy snow in western New York State ranged up to 16 inches near Buffalo, and winds up to 50 m.p.h. caused considerable drifting. However, higher temperatures removed virtually all the snow cover in the lower Great Lakes region and Northeast by the end of the period. (Summary supplied by U. S. Weather Bureau).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

PEACH BUPRESTID (Capnodis tenebrionis L.)

**Economic Importance:** This wood borer is one of the most formidable enemies of stone fruit production, particularly peach and apricot, in the Mediterranean Region. In Morocco heavy losses have been reported in young orchards. The insect is regarded as the most serious pest of plum trees in coastal Algeria. Italy also rates it as a major pest of stone fruits.

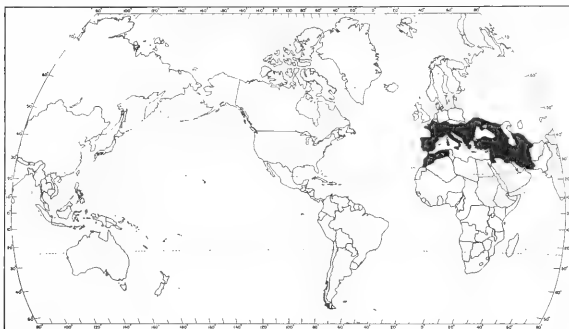


Damage to Apple Tree  
by Capnodis sp.

**Hosts:** Peach, almond, plum, apricot, cherry and other related stone fruits.

**Distribution:** Occurs generally in the Mediterranean Region and as far east as Iran. Also occurs in Austria, Bulgaria, South Germany, Hungary, Romania, Switzerland, Yugoslavia and parts of the USSR.

**Life History and Habits:** Adults appear at beginning of May on the coast of Algeria and in Italy. They feed for an indefinite period. Emergence continues over a period of several months with the adults being most abundant from mid-July to early September. The females are much more numerous than the males. The adults are frequently observed in the orchards. Their flight is awkward, noisy and rapid. They feed on the young branches. The damage caused by the adults is of little importance in comparison to that of the



General Distribution of Capnodis tenebrionis

larvae which almost always kill the young trees which they attack. Mating occurs on small branches of the host in July and oviposition begins shortly thereafter. The eggs are deposited on the trunk at or slightly below ground level. Females lay from 50-120 eggs. The eggs hatch rapidly but larval development is slow, lasting 2 years. One or more larvae may be found per trunk, near or at ground level. They are found under the bark or deep in the wood in large galleries. Normally the larva is found in a "U" shape. The attack is more severe in trees 2 to 3 years of age. Pupation occurs in a cell 3 cm. long in the lower trunk or principal roots. Pupation lasts about one month.

Description: ADULT - This buprestid is large, ranging from 15 to 27 mm. with the males smaller than females. Males rarely over 20 mm. in length. Color generally dull black. Head large, sunk in the thorax. Eyes brown, elliptical. Antennae serriform, 11-segmented, longer than head and folded under prothorax when insect is at rest. Pronotum large, much broader than long, slightly wider than base of elytra, with sides rounded. Surface with dense, pruinose punctures and numerous glazed areas. Elytra sturdy, large, coriaceous, uniformly dull black, 2.5 to 3 times longer than pronotum. Punctuation, under a hand lens, elongate, irregular and arranged in striae. Legs relatively short; tarsi strongly dilated, with curved bristles on internal surface. Ventral surface of body dull black. Underwings membranous, well developed, smoky colored. EGG elliptical, white, opaque, 1 mm. x 1.5 mm. LARVA - Full-grown larva 60-65 mm., white, flabby, legless. General appearance similar to that of other buprestid larvae. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(50) 12-9-60.



Adults of Capnodis tenebrionis (Showing Variation)









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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

CHINCH BUG hibernation surveys completed in Illinois, Arkansas, Kansas, Oklahoma and Nebraska. Very severe ratings recorded in Leavenworth and Harvey Counties, Kansas, and Cotton County, Oklahoma. Severe ratings recorded in 3 Illinois counties; Washington County, Oklahoma; and Chase, Coffey, Osage, Allen and McPherson Counties, Kansas. GREENBUG controls applied to limited acreage of small grains in Jefferson and Kingfisher Counties, Oklahoma. (p. 1132).

CITRUS RED MITE increasing and CITRUS RUST MITE increased to a very high level in citrus by end of November in Florida. (p. 1133).

MOUNTAIN PINE BEETLE may attack approximately 40 percent more white pine trees in Canyon and Bungalow Ranger Districts of Clearwater National Forest, Idaho, in 1961. (p. 1134).

INSECT DETECTION: New state records for Kentucky were a weevil (Apion longirostre) (p. 1134) and Asiatic oak weevil (p. 1135).

INSECTS not known to occur in the United States. (p. 1137).

Reports in this issue are for week ending December 9, unless otherwise indicated.

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WEATHER OF THE WEEK ENDING DECEMBER 12

Persistent abnormally low temperatures in the Far West and the season's first major snow storm in the East features this week's weather. An almost continuous inflow of cold northern air into the Far West kept temperatures below normal, and weekly averages ranging from 3° to 15° below normal were generally 5° to 10° lower than for the previous week. Freezing occurred at many locations along the Pacific coast as far south as Santa Maria, California, and southward in the Interior to Tucson, Arizona, and El Paso, Texas. East of the Rocky Mountains, the week was slightly warmer than the previous week in southern areas and a little colder in the North. Maximum temperatures reached record high levels in the 40's and 50's in the Great Lakes Region on the 5th and in the Northeast on the 6th and 7th. This mild period was followed by a cold air intrusion which reduced temperatures to subzero levels in extreme northern areas, with a low of -24° at International Falls, Minnesota, on the 8th. All lakes and streams are now frozen over in Minnesota. Lowest temperatures in the Northeast were recorded on the 11th and 12th, when minima generally were below zero in upper New York and northern New England, with lows of -28° at Stillwater Reservoir, New York, on the 11th and -8° at Houlton, Maine, on the 12th. Freezing, however, extended to northern portions of Mississippi, Alabama and Georgia by the end of the period.

The week's precipitation exceeded 1/2 inch along the North Pacific coast, in eastern North Dakota and northern Minnesota, eastern Arizona, southern New Mexico, and the Southeastern quarter of the Nation except Florida and southern portions of Georgia and Alabama, where amounts were less. Most of the precipitation in southern and eastern areas fell during the passage of a storm system which developed in the Far Southwest on the 9th and 10th and moved east-northeastward, reaching the Virginia coast on the 11th. Precipitation was in the form of snow from New Mexico

(Weather continued on page 1136)

CEREAL AND FORAGE INSECTS

CHINCH BUG (Blissus leucopterus) - ILLINOIS - Hibernation survey completed. Infestation ratings were severe in 3 counties, moderate in 11 counties and light in 12 counties. In 1959, the infestation ratings were severe in 6 counties, moderate in 2 counties and light in 11 counties. (Ill. Ins. Rpt.). ARKANSAS - Annual hibernation survey showed a decline in populations as compared with 3 previous years. Only moderate populations (500-1,000 per square foot) found in Lawrence and Monroe Counties. Other 16 counties surveyed had noneconomic populations. Monroe County's relatively high average count was due to a very high count of 3,020 bugs per square foot in one sample rather than a relatively high count of several samples. (Ark. Ins. Sur.). OKLAHOMA - Infestation for Washington County rated as severe. County omitted from results of survey reported in CEIR 10(49): 1111. Other ratings reported showed infestation very severe in Cotton County, moderate in Comanche, Okmulgee and Ottawa Counties and light or noneconomic in other areas surveyed. (Okla. Coop. Sur.). KANSAS - Annual hibernation survey completed. Collections of two-square-foot samples of bunch grass made during November and December. Results were as follows: 2 counties classified very severe (Leavenworth, Harvey), ranging from 2,038 to 2,623 bugs per square foot; 5 counties severe (Chase, Coffey, Osage, Allen, McPherson), ranging from 1,129 to 1,989 bugs per square foot; 7 counties moderate, ranging from 744 to 931 bugs per square foot; 10 counties light, ranging from 268 to 452 per square foot; and 32 counties noneconomic, ranging from 3 to 237 bugs per square foot. (Fitchett, Hohnholt, Peters). NEBRASKA - Fall hibernation survey showed populations light and scattered. Counties showing light counts were Burt, Gage, Johnson, Lancaster, Otoe and Pawnee. (Bell).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Populations continued light in fields of small grain previously reported infested in western two-thirds of State. Light infestations in fields of grain planted for winter pasture in localized areas of Okmulgee County. Chemical controls reportedly applied to limited acreage in Jefferson and Kingfisher Counties. (Okla. Coop. Sur.). TEXAS - Found in only 5 fields in 3 counties (Waller, Grimes and Brazos) in survey of small grains in central and south central areas. Infestations generally light, averaging 1-10 per foot of row. No damage apparent. (Chada, Nov. 28-Dec. 2).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Light infestations on central area barley. (Ariz. Coop. Sur.).

A ROOT APHID (Rhopalosiphum rufiabdominalis) - OKLAHOMA - Populations decreased sharply in infested fields of small grains in Okfuskee County. Reported (unconfirmed) infesting some grain fields in localized area of Creek County. (Okla. Coop. Sur.).

A CUTWORM - OKLAHOMA - Light infestations of early instar larvae of an unidentified species continued in small grain fields in Kingfisher County. (Okla. Coop. Sur.).

A BLISTER BEETLE (Meloe angusticollis) - NORTH CAROLINA - Adults feeding on rye, oats, turnips and in pastures in Burke County. (Spears, Farrier).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Infestations reported in Russell and Pottawatomie Counties. (Gates)

WHEAT CURL MITE (Aceria tulipae) - KANSAS - Early planted wheat in Barton, Ellsworth, McPherson, Saline, Stafford and Reno Counties showed light to heavy infestations. Late-planted wheat in same areas showed none to trace infestations. This represents little change from previous surveys this year. (Somsen).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Light in few fields of small grain in localized area of Kingfisher County. (Okla. Coop. Sur.). TEXAS - Light infestations in 16 fields in central counties of McLennan, Bell, Williamson, Travis, Hill, Kerr and Milam. Heaviest infestations ran less than 10 per foot and no apparent damage occurred. (Chada, Nov. 28-Dec. 2).

A GRASS MITE (Aceria neocynodonis) - CALIFORNIA - Heavy populations occurring on Bermuda grass in Compton, Los Angeles County. (Cal. Coop. Rpt.).

A WHITEFLY - ARIZONA - Honeydew left by previous infestations causing considerable trouble in harvesting of Yuma County Bermuda grass seed. (Ariz. Coop. Sur.).

GROUND MEALYBUG (Rhizoeocis falcifer) - CALIFORNIA - Medium infestations on roots of Stephanotis and grasses in Palo Alto, Santa Clara County. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Common in alfalfa in Kingfisher and Noble Counties. (Okla. Coop. Sur.).

LONG-TAILED MEALYBUG (Pseudococcus adonidum) - CALIFORNIA - Medium populations on New Zealand flax in Anaheim, Orange County. (Cal. Coop. Rpt.).

#### FRUIT INSECTS

Citrus Insect Situation in Florida - End of November - PURPLE SCALE (Lepidosaphes beckii) infested 65 percent of groves inspected. Activity and populations will continue to be low in all districts. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 73 percent of groves. Activity has taken downward trend which will continue during December. Populations now at average level and generally will be in low range through the winter. Districts now with high activity have more than 70 percent of scales in young stages. Activity is high in upper east coast and Bartow districts. CITRUS RED MITE (Panonychus citri) infested 52 percent of groves. Although there is a decline in activity, an upward trend is developing. Statewide population is still below average, but infestations are very spotty. Most districts now have a few heavy infestations and more are expected in December. Activity is heavy in upper east coast and Bartow districts. CITRUS RUST MITE (Phyllocoptruta oleivora) infested 85 percent of groves, and activity increased to a very high level. A gradual decline is expected to begin in early December. Populations on leaves and fruit are near highest record for this time of year and will continue high for several weeks in most districts. High activity is present in Bartow, Gainesville, Orlando, west coast, Ridge, Brooksville and Indian River districts. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

YUMA SPIDER MITE (Eotetranych yumensis) - ARIZONA - Light to medium populations continue in citrus groves and citrus nurseries in Yuma County. (Ariz. Coop. Sur.).

A LEAFHOPPER (Alconeura unipuncta) - CALIFORNIA - Light adult population infesting pineapple, guava and miscellaneous plants in Turlock, Stanislaus County. (Cal. Coop. Rpt.).

BLACK-MARGINED APHID (Monellia costalis) - CALIFORNIA - Light infestation on pecan trees east of Clovis, Fresno County. (Cal. Coop. Rpt.).

SPRINGTAILS - CALIFORNIA - Light populations of Entomobrya nivalis and E. atrocineta occurring in pecan husks and nuts in Clovis, Fresno County. (Cal. Coop. Rpt.).

#### TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Light infestations on sugar beets in Maricopa County. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

MOUNTAIN PINE BEETLE (*Dendroctonus monticolae*) - IDAHO - A biological evaluation of infestations in old-growth western white pine stands within Canyon and Bungalow Ranger Districts, Clearwater National Forest, in September, on over 40,000 acres of these 2 ranger districts, indicated that approximately 40 percent more trees may be attacked in 1961 than were attacked and killed in 1960. These districts have been infested since 1934. Localized infestations also reported in Coeur d'Alene, St. Joe, Kaniksu and Kootenai National Forests in mature white pine type. (Tunnock, Jr.).

ENGLEMANN SPRUCE BEETLE (*Dendroctonus engelmanni*) - IDAHO - A few current infestations reported this season in the Sandpoint and Bonners Ferry Ranger Districts, Kaniksu National Forest. (Tunnock, Jr.).

A PINE ENGRAVER (*Ips oregonis*) - IDAHO - Reported in western white pine slash during July in Coeur d'Alene National Forest. (Tunnock, Jr.).

PINE BUTTERFLY (*Neophasia menapia*) - IDAHO - An endemic number of adults spotted flying around tops of western white pine trees in Clearwater National Forest. (Tunnock, Jr.).

COOLEY SPRUCE GALL APHID (*Chermes cooleyi*) - IDAHO - Light infestation on a blue spruce in Pinehurst. (Tunnock, Jr.).

A PINE RESIN MIDGE (*Retinodiplosis* sp.) - IDAHO - Only 300 acres in Quartz Creek and Priest River drainages in Kaniksu National Forest damaged in 1960, a considerable reduction in acreage damaged in 1959. (Tunnock, Jr.).

AN ELM FLEA BEETLE (*Altica carinata*) - PENNSYLVANIA - Congregating in numbers around trunk and base of elms in Warren County on December 1. (Adams).

A WEEVIL (*Apion longirostre*) - KENTUCKY - Found on hollyhock at Lexington, Fayette County, on July 9. Det. by R. E. Warner. This is the first record of the species in the State. (Townsend).

FULLER ROSE BEETLE (*Pantomorus godmani*) - NORTH CAROLINA - Adults causing light injury to Japanese holly at edge of park in Hoke County. (Chadwick, Farrier).

HAWTHORN LACE BUG (*Corythucha cydoniae*) - PENNSYLVANIA - Caused moderate to severe injury to Pyracantha in Philadelphia in November. (Menusan).

BARNACLE SCALE (*Ceroplastes cirripediformis*) - CALIFORNIA - Heavy infestation on gardenia and Fuchsia sp. in Fresno, Fresno County. (Cal. Coop. Rpt.).

Greenhouse Pests in Oklahoma - Light infestations of APHIDS, heavy but localized infestations of SPIDER MITES and spotted infestations of MEALYBUGS continued to cause concern in some greenhouses checked in the central and east central areas. (Okla. Coop. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - TEXAS - *Culex* sp. occurred in unprecedented numbers, due probably to a very warm fall. First frost was November 28. *Aedes vexans* still present. Psorophora howardii active, being last taken just before the first frost. Anopheles crucians about the same as in October, Uranotaenia lowii and U. sapphirina both found in southern traps and Culiseta inornata occurred in considerable numbers. (Tex. Coop. Rpt.).



FACE FLY (Musca autumnalis) - PENNSYLVANIA - Quite abundant in attic of home at Altoona, Blair County, on November 8. Pollenia rudis also present. (Udine).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Counts averaged 22 larvae per animal (ranged 0-62 per animal) on 226 steers checked in Woodward and Harper Counties. (Okla. Coop. Sur.).

LICE - UTAH - Treatments for lice conducted on 200 cattle in Garfield County, recently, and 3,800 cattle in eastern Millard County. (Knowlton, County Agents; Dec. 6). OKLAHOMA - Linognathus vituli infested only one of 220 head of steers checked in Woodward and Harper Counties, but was common on cattle checked in Atoka County. Haematopinus suis infesting a limited number of hogs checked in Creek, Woodward and Harper Counties. (Okla. Coop. Sur.).

BLACK WIDOW SPIDER (Lactrodectus mactans) - PENNSYLVANIA - Very heavy infestation on property in Chester on November 10. (Meyer).

#### STORED-PRODUCT INSECTS

WAX MOTHS - UTAH - Caused damage to stored honeycombs in a large storehouse at Roosevelt, Duchesne County. (Knowlton, Dec. 6).

DRUG-STORE BEETLE (Stegobium paniceum) - ARIZONA - Medium populations in some stored Bermuda seed in Yuma County. (Ariz. Coop. Sur.).

#### MISCELLANEOUS INSECTS

JAPANESE BEETLE (Popillia japonica) - NEBRASKA - Extensive trapping conducted at major airports, railroad yards and military bases from May through September. No positive finds recorded. Spot checks made on 27 planes arriving from eastern airports also produced negative results. (Bell).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - KENTUCKY - Entered a hospital at Harlan, Harlan County, on August 30 and created a nuisance. Det. by R. E. Warner. This is the first record of this species in the State. (Townsend).

A POWDER POST BEETLE (Trogoxylon aequale) - CALIFORNIA - Medium infestation in bamboo drapes in a home in Richmond, Contra Costa County. (Cal. Coop. Rpt.).

AN APHID (Lachnus salignus) - PENNSYLVANIA - Migration to side of house heavy in Blair County on November 8. (Udine).

EARWIGS - LOUISIANA - Becoming a nuisance in homes in Baton Rouge and New Orleans again. Species probably Euborellia annulipes. (Spink).

SPRINGTAILS - CALIFORNIA - Hypogastrura armata and Entomobrya unostrigata populations heavy, causing a nuisance on surface of a swimming pool in Garden Grove, Orange County. (Cal. Coop. Rpt.).

CLOVER MITE (Bryobia praetiosa) - PENNSYLVANIA - Abundant and considerably active around windows of homes in Montgomery and Centre Counties last week of November. (Gesell, Menusan).

MILLIPEDES - VIRGINIA - A general nuisance around homes in Fairfax, Fairfax County, on December 1 (Beard, Tarpley) and at Leesburg, Loudoun County, on December 5. (Brown, Rowell).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
ARIZONA							
Mesa 11/27-12/4			2		5		
LOUISIANA							
Baton Rouge 12/2-8	13	4	5	4		9	
SOUTH CAROLINA							
Charleston 12/5-11	4			28		7	
TEXAS							
*Brownsville 11/19-25	61	35	11	39	34	7	4

\* Four traps - Brownsville

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(Weather continued from highlight page)

and west Texas northeastward to the Middle Atlantic and New England States. Snow ranged up to 18 inches in southern New Mexico, from 4 to 5 inches in west Texas, 5 to 10 inches in extreme western Oklahoma, 4 to 5 inches in most of Kansas, and across central portions of Missouri, Illinois, Indiana, and most of Ohio and West Virginia. Much heavier amounts fell in the Coastal States from northern Virginia to New England on the 11th and 12th, with depths ranging up to a foot or more at many stations. Precipitation was in the form of rain in central and eastern Texas and the remaining Southern states. Totals ranged up to 7 inches in eastern Texas, where flooding occurred along many streams. (Summary supplied by U. S. Weather Bureau).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

STRAWBERRY LEAF BEETLE (Galerucella tenella L.)

Economic Importance: This chrysomelid is an important pest of strawberry plants throughout many areas of Europe. Sporadic outbreaks of the pest have caused considerable reduction of yield in some areas. The insect does not generally kill the plants, but if infestation occurs two years in a row, the crop is considerably reduced. Larvae and adults feed on the lower and upper epidermis of the leaves and on the soft underlying tissue of strawberries, leaving opposite layer of epidermis intact. Leaves present a characteristic spotted appearance. If leaves are weathered, they will appear as if regular holes had been eaten out.



Damage to Strawberry Leaf

Hosts: Strawberry, ladysmante (Alchemilla sp.), European meadowsweet, spiraea.

Distribution: Occurs throughout most of Europe and extends into western Siberia in Asia.

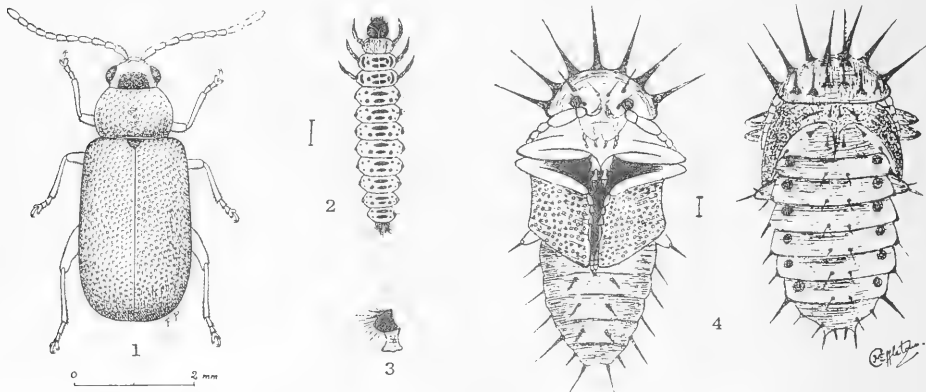
Life History and Habits: In Latvia SSR, the biology was recorded as follows: Eggs are laid in small groups of 2-5 on leaves of host plants. The species prefers damp places and does not migrate to any great degree. Overwintered adults appear in second half of April and feed on stems and upper surface of leaves of strawberry, seriously injuring plants. If the leaves are touched, the beetle drops to the ground. Oviposition occurs from early May until mid-July, the eggs being laid singly, or in small batches, on stems or upper surface of leaves. Eggs are normally deposited in a hole in the leaf surface. The maximum number of eggs oviposited in an insectary was 312. Larvae hatch in 21-32 days. While feeding, they migrate from plant to plant, but do not travel great distances. Larval damage can be severe. The larval stage lasts 22-28 days, and pupation occurs in the soil near the surface.



General Distribution of Galerucella tenella

Young adults emerge in about 15 days and feed until the end of August, when they enter the soil, 2-4 inches deep, for hibernation. Some individuals remain on the plants as late as mid-September.

**Description:** ADULT - Similar to the elm leaf beetle (*Galerucella xanthomelaena*), but much smaller, 2.75-3.5 mm. in length, and does not have the dark stripe along the sides of each elytra. *G. tenella* is a rather broad species, with yellowish antennae (dark at apex) and pubescence scarce on thorax. Third joint of antenna longer in proportion than the second. Head short, with narrow genae and rather short mandibles. Pair of callosities on forehead distinct and shining; median impression of thorax distinct; subocellate punctures of elytra not deep. Epipleura of elytra continued to apex, with sutural apical angle produced; suture and margin of elytra yellow, with shoulders dark. Legs pale; femora comparatively slender. Central line of thorax and humeral callosities usually infuscate and occasionally elytra marked with a more or less obsolete dark band. Sexual characters different; male with fifth ventral segment of abdomen slightly impressed at apex; same segment in female being almost entire. LARVA - Length 3.2-4.2 mm. Color, dirty greenish-yellow, head black. All segments of body, with exception of head, pronotum and anal segment, with pair of elongate, transverse, rather broad stripes; cephalad stripe being longer than the caudad one. Stripes on meso and metathorax separated as shown in figure below. Dorsal segments transversely furrowed. Each segment of body, with exception of thoracic region, has four shining black tubercles on each side. Tubercles vary in size; largest near transverse stripes. Pronotum free of markings or tubercles and uniformly dark brownish-gray. Meso and metanota have 2 tubercles instead of 4 on each side; inner pair somewhat round, outer pair much larger and somewhat crescent-shaped. Terminal segment brownish-gray and more hairy than rest of body. Legs black, each with 2 sharp claws. Anal segment possesses a large and simple proleg. Body covered with more or less numerous yellow hairs. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(51) 12-16-60.



Figures of *Galerucella tenella* L.: 1 - Adult. 2 - Larva. 3 - Anal proleg of larva, lateral view. 4 - Pupa, ventral and dorsal views.

**Major references:** Fowler, W. W. (1890?), The Coleop. Brit. Ids., Vol. IV, p. 330, London; Efflatoun, H. C., 1918, Ann. Appl. Biol. 4(4):206-210, illus. of larva, pupa, and damage; Ozols, E., 1929, Folia Zool. Hydrobiol. 1(1):113-147. Figure of adult from Balachowsky, A. and Mesnil, L. 1935. Les Insectes Nuisibles aux Plantes Cultivees. 1137 pp. Paris.



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*Cooperative*  
ECONOMIC INSECT  
REPORT

*Issued by*

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations  
Plant Pest Control Division  
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## COOPERATIVE ECONOMIC INSECT REPORT

*SEASON'S GREETINGS*

## Highlights of Insect Conditions

CORN INSECT (corn earworm and corn rootworms) survey in Iowa, Fall 1960, reported. Percentage of corn ears damaged by corn earworm and percentage of stalks lodged due to corn rootworms averaged 24 and 11, respectively. (p. 1141).

BOLL WEEVIL infestations found in Brewster, Presidio, Jeff Davis, Culberson, Hudspeth and El Paso Counties, Texas, during November. Damage much greater in Presidio County. Infestation not believed established in El Paso County. (p.1143). PINK BOLLWORM surveys completed in several states during November. Infestations in Texas and Oklahoma continue to appear lighter than in 1959 crop. Acres infested in Arizona totaled 1,225 in central area and 3,246 in eastern area as of November 30. (pp. 1143, 1144).

CAMPHOR SCALE and A SPIDER MITE (Eotetranychus lewisi) collected at several locations in Florida. (p. 1145).

ANTHROPOD PESTS of livestock in West Virginia during 1960 reported. Face fly was heavy. Infestations of CATTLE GRUBS and LICE reported in Oklahoma and Utah. (p. 1146).

INSECT DETECTION: New state records reported were a sawfly (Neodiprion nanulus contortae) in Montana (p. 1144), camphor scale in Florida and an aphid (Sanbornia juniperi) in Utah (p. 1145). New county records reported were white-fringed beetles in Maury County, Tennessee; olive scale in Solano County, California; walnut husk fly in San Mateo County, California (p. 1142); sweetpotato weevil in Smith County, Mississippi (p. 1143); and old-house borer in East Baton Rouge Parish, Louisiana (p. 1146).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 1148).

INSECTS not known to occur in the United States. (p. 1149).

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Reports in this issue are for week ending December 16, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

MID-DECEMBER 1960 TO MID-JANUARY 1961

The Weather Bureau's 30-day outlook for the period mid-December to mid-January calls for a continuation of the wintry weather pattern established during the past ten days. Temperatures are expected to average well below seasonal normals over the eastern and southern thirds of the Nation and moderately below normal elsewhere, except for near normal over the northern Plains and Pacific coast. Precipitation is expected to exceed normal over the southern half of the country and along the Atlantic seaboard, with more sleet and snow than usual. Subnormal amounts are predicted for the upper Mississippi Valley and Pacific Northwest. In unspecified areas near-normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price \$4.80 a year, \$2.40 a half year.

WEATHER OF THE WEEK ENDING DECEMBER 19

Temperatures this week averaged slightly above normal in northern Maine, 3° to 6° above in the northern Great Plains, near to a few degrees above normal in Nevada and the Pacific States, 3° to 6° below normal in the Rocky Mountain region and 6° to 12° below in the South and East. This week was as much as 15° colder than the previous week in the Southeast. Cold air covered most of the Nation at the beginning of the period, when freezing extended to central Florida and temperatures fell to subzero levels at many stations in the northeastern quarter of the Nation. Cold air invaded the northern Rocky Mountain region and midcontinent area again on the 15th and 16th and the Southeast on the 17th. In Florida, Tampa recorded 32° on the 13th and scattered frost extended to the Everglades on the 17th. Freezing also extended to the Winter Garden area of Texas on the 15th to 17th, with lows of 32° or below on the latter date at Victoria and Houston, Texas; New Orleans, Louisiana; and Mobile, Alabama.

The week's precipitation in excess of 1/2 inch was generally limited to the Gulf coastal areas, eastern New England, North Atlantic coast, North Pacific coastal areas, and interior sections of Washington and Oregon. Moderate to heavy precipitation with blizzard conditions occurred along the North Atlantic coast in all of New England and eastern New York on Monday, December 12, and was produced by a storm system off the New England coast. Another storm system moving eastward along the Canadian border developed strong intensity over the Northeast, producing heavy precipitation in New England on the 16th. Snow and rain during the storm produced 1 to 2 inches of moisture in eastern New England. Another storm system, which developed in the northwestern Gulf of Mexico on the 14th and moved northeastward across northern Florida on the 15th, produced most of the week's rainfall in Gulf coastal areas. In Florida, this precipitation, totaling over 1 inch in parts of the north, was very beneficial since it was the first sufficient rainfall there since November 1. At the end of the period, a storm system moved into the Pacific Northwest producing light to moderate precipitation in that area. There was no significant change in the snow cover in the Far West during the week, but depths decreased east of the Rockies. In the central Great Plains, the ground is mostly bare, but parts of the Dakotas and northern Minnesota are covered with a few inches, except in eastern North Dakota, where depths range up to as much as 10 inches. In Michigan, depths range from 1 inch in the south to 10 inches in the extreme north. The Northeastern cover, ranging up to 10 inches in the mountains, extends to northern Virginia, over much of West Virginia and Ohio and across central portions of Indiana and Illinois. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Light in most fields of small grain in State. Small, isolated areas in central portion of State show moderate infestations. (Okla. Coop. Sur.). NORTH CAROLINA - In Nash County, 25-75 percent of some fields of oats and rye killed; larger areas turning brown. (Jones, Olive).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Scattered infestations throughout State. Localized field in south central region showing economic damage. (Okla. Coop. Sur.).

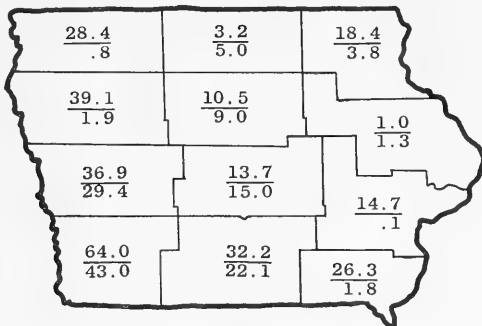
CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Scattered infestations in rank small grains in sheltered areas. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Present in small numbers; 0-8 per linear foot. (Okla. Coop. Sur.).

APHIDS - UTAH - Barley yellow dwarf was widespread in the State during 1958, less abundant during 1959 and rare in 1960. Although the known aphid vectors of this disease are present in the State, they were only occasionally abundant on barley during 1960. (Knowlton, Woodward).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Light populations in west central area. (Okla. Coop. Sur.).

Corn Insect Survey in Iowa, Fall 1960 - The percentage of corn ears damaged by corn earworm and the percentage of stalks lodged due to corn rootworms during the fall of 1960 averaged 24 and 11, respectively. The top figures in each district represent the percent of ears damaged by corn earworm and the bottom figures in each district represent the percent of stalks lodged due to corn rootworm damage. (Craig).



GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Heavy populations damaging alfalfa plantings in Brawley area, Imperial County, and medium damage occurring to flower beds in Pleasanton, Alameda County. (Cal. Coop. Rpt.).

A BLISTER BEETLE (Meloe angusticollis) - NORTH CAROLINA - Feeding heavily on clover in Jackson County, at higher elevations; infestation quite extensive in county. (Early, Farrier).

CLOVER SEED CHALCID (Bruchophagus gibbus) - CALIFORNIA - Light infestation in clover in Tracy area of San Joaquin County. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - TENNESSEE - Infestation found for first time at Columbia, Maury County; a new county record. (PPC, So. Reg.; Nov. Rpt.). NORTH CAROLINA - Live beetles found to be very active during last week of November in Sampson County. (Morgan). VIRGINIA - Spot checks made in Greensville, Brunswick and Mecklenburg Counties during November, with negative results. (PPC, East. Reg.).

MEALY PLUM APHID (Hyalopterus arundinis) - CALIFORNIA - Heavy populations on leaves of Phragmites sp. in Holtville, Imperial County. (Cal. Coop. Rpt.).

#### FRUIT INSECTS

SHOT-HOLE BORER (Scolytus rugulosus) - CALIFORNIA - Heavy local infestation in apricot trees in Richmond, Contra Costa County. (Cal. Coop. Rpt.).

AN APHID (Anuraphis helichrysi) - CALIFORNIA - Adults light on prune leaves in Richfield, Tehama County. (Cal. Coop. Rpt.).

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Medium on olive fruit in Dixon area, Solano County; new county record. (Cal. Coop. Rpt.).

AN ANT (Crematogaster sp.) - CALIFORNIA - Heavy populations working on apple fruit in Volcano, Amador County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Single adult taken in Frick trap in Portola Valley, San Mateo County, in November; a new county record. (Cal. Coop. Rpt.).

CITRUS MEALYBUG (Pseudococcus citri) - CALIFORNIA - Light on limes in Vista, San Diego County. (Cal. Coop. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Surveys in chemical control zones in States of Nuevo Leon, Sonora and Baja California reported. Total of 75,625 citrus trees on 2,061 properties inspected, with infestations being found on 11 properties as follows: One tree on one property in Montemorelos, Nuevo Leon; 4 trees on one property in Linares, Nuevo Leon; and 16 trees on 9 properties in Allende, Nuevo Leon. All inspections in Sabinas Hidalgo, Gral. Teran and Hualahuises, Nuevo Leon, Mesa de Tijuana, Baja California, and Hermosillo, Sonora, were negative. Treatments initiated on all newly infested properties. Inspection in Hidalgo, Tamaulipas, negative. In biological control zone of State of Tamaulipas, light infestations found on 21 properties of 199 inspected. (PPC, Mex. Reg.; Nov. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Trapping operations during November continued negative. Other Anastrepha trapped during November included 11 A. serpentina, 5 A. spatulata, 1 A. fraterculus and 1 A. mombinpraeoptans. Traps operated during November in Cameron, Dimmit, Frio, Hidalgo, La Salle, Starr, Webb, Willacy and Zavala Counties. (PPC, So. Reg.). CALIFORNIA - Trapping operations in San Diego and Orange Counties continued, with negative results, during November. Larval examinations of fruit also negative. (PPC, West. Reg.).

TRUCK CROP INSECTS

DIAMONDBACK MOTH (Plutella maculipennis) - NORTH CAROLINA - Feeding on cabbage and collards in Hyde County. (O'Neal, Farrier).

IMPORTED CABBAGEWORM (Pieris rapae) - NORTH CAROLINA - Causing injury to collards in Hyde County. (O'Neal, Farrier).

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Heavy populations damaging sugar beets in Calexico, Imperial County. (V. Roth).

MELONWORM (Diaphania hyalinata) - CALIFORNIA - Single larva taken in a gourd leaf in Winterhaven area, Imperial County, is first this season. The species has not attacked commercial plantings in the State so far. (Cal. Coop. Rpt.). ARIZONA - Moths taken in pink bollworm light trap collections during November in Yuma County. (PPC, West. Reg.).

A SERPENTINE LEAF MINER (Liriomyza sp.) - FLORIDA - Averaging up to 3 adults per leaf on tomatoes, potatoes, beans and many other plants in Dade County. General infestations exist throughout the area. (Fla. Coop. Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - MISSISSIPPI - Infestation found for first time in Smith County during November; subsequent surveys negative. (PPC, So. Reg.).

BEE T ARMYWORM (Spodoptera exigua) - TEXAS - Infesting castor beans in greenhouse at College Station, Brazos County. (Newton).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Survey conducted during November in Counties of Brewster, Pecos, Reeves, Loving, Ward, Winkler, Presidio, Jeff Davis, Culberson, Hudspeth and El Paso. Infestations found in Brewster, Presidio, Jeff Davis, Culberson, Hudspeth and El Paso Counties. Apparently infestations in Brewster, Jeff Davis, Culberson and Hudspeth Counties due to a spread of the insect from Presidio County which is the most heavily infested section. Specimens also found in El Paso County, but infestation is not believed to be established. Damage much greater in Presidio County than in any of the other counties. Infestations not believed to be presently established in El Paso Valley proper. Present survey indicates that infestations have become established in Poviner sections of Presidio and Hudspeth Counties. (PPC, So. Reg.; Nov. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - MEXICO - Surveys in western states of Baja California, Sonora and Sinaloa during November negative. (PPC, Mex. Reg.). Gin trash and lint cleaner inspections completed in TENNESSEE and ALABAMA and continued in MISSISSIPPI and NORTH and SOUTH CAROLINA during November, with negative results. Inspection of hibiscus blooms and okra in FLORIDA negative. Inspections in OKLAHOMA and TEXAS continued to show that infestation is generally lighter during current season than in the 1959 crop. In ARKANSAS, 3 larvae recovered from gin trash collected from one gin in Crawford County and one from a gin in White County. In LOUISIANA, 2 specimens recovered from gin trash in De Soto Parish and one from lint cleaner in Sabine Parish. (PPC, So. Reg.; Nov. Rpt.). MISSOURI - Inspections of gin trash and lint cleaners which included counties of Butler, Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard during period September 14 to November 10 negative. KENTUCKY - Lint cleaner inspections in Hickman County negative. (PPC, Cent. Reg.; Nov. Rpt.). ARIZONA - Surveys (gin trash, lint cleaner and followup field inspection and boll examination) located number of infestations in central and eastern cotton-producing areas of State. A table, showing infestations as of November 30, 1960, is on page 1144.

Pink Bollworm Infestations in Arizona - 1960

<u>Central Arizona</u>			
<u>County</u>	<u>Number Locations</u>	<u>Number Properties</u>	<u>Acres Infested</u>
Maricopa	5	10	498
Pima	-	-	-
Pinal	4	13	727
Santa Cruz	-	-	-
Total	9	23	1225
<u>Eastern Arizona</u>			
Cochise	2	6	478
Gila	-	-	-
Graham	8	35	1533
Greenlee	1	1	10
Total	11	42	2021
State Total	20	65	3246

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PHYCITID (Dioryctria sp.) - MONTANA - Larvae found on dead bark around blister rust cankers on treated western white pines. Trees grew in Star Creek Plantation, Kootenai National Forest. (Tunnock, Jr.).

A LEPIDOPTEROUS NEEDLE MINER - MONTANA - Pupa of an undetermined species found in August on Englemann spruce growing along Lookout Creek, Libby Ranger District, Kootenai National Forest. (Tunnock, Jr.).

A PITCH TWIG MOTH (probably Petrova sp.) - MONTANA - Pitch nodules caused by this insect were apparent on lodgepole pines within Moser Creek drainage, Gallatin National Forest. (Tunnock, Jr.).

A LEPIDOPTERON- MONTANA - Larvae of a small undetermined species defoliated crowns of pole-size lodgepole pines in dense stand on 1,200 acres in Truman Gulch, north of Bozeman. (Tunnock, Jr.).

APHIDS - MONTANA - Cinara sp. infesting subalpine fir foliage near Cooke City, Park County. (Tunnock, Jr.). CALIFORNIA - Nymphs of Eulachnus rileyi medium on Pinus sp. locally in Sepulveda, Los Angeles County. (Cal. Coop. Rpt.).

A GALL MIDGE - MONTANA - Larvae of an undetermined species found in several twigs of a ponderosa pine near Libby Ranger Station. (Tunnock, Jr.).

SAWFLIES (Neodiprion spp.) - MONTANA - Two species that have been defoliating overstory lodgepole pine and occasional ponderosa pine trees near Zortman, Phillips County, have recently been determined as N. fulviceps complex and N. nanulus contortae. (Tunnock, Jr.). N. nanulus contortae new to State according to ARS records.

LINDEN LOOPER (Erannis tiliaria) - PENNSYLVANIA - Commonly found crawling up forest trees in south central area, along with fall cankerworm; in equal numbers in some sections and greater numbers in some other sections. (Sleesman, Oct. 23).

FALL CANKERWORM (Alsophila pometaria) - PENNSYLVANIA - Males and females present on forest trees in south central portion of State during period October 16-23; females crawling up trees to deposit eggs abundant in certain areas. (Negley). Very light in southwest and very scarce in northeast areas. (Cole, Yackley, Nichols; Dec. 9).

A CERAMBYCID (Neoclytus conjunctus) - CALIFORNIA - Heavy larval infestations of this species and a clerid, Chariessa elegans, occurring in trunks of live oak trees in Loomis, Placer County. (Cal. Coop. Rpt.).

TULIP BULB APHID (Anuraphis tulipae) - FLORIDA - A shipment of 30,000 imported tulip bulbs inspected by R. J. Griffith at Olovista, Orange County, on November 11 was found infested with this species. Det. by A. N. Tissot. The bulbs have been destroyed. (Fla. Coop. Sur.).

AN APHID (Sanbornia juniperi) - UTAH - Collected on juniper at Logan, Cache County, on August 16. This is a new State record. (Smith, Knowlton).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - Heavy on acacia trees in El Sobrante, Contra Costa County. (Cal. Coop. Rpt.).

CAMPHOR SCALE (Pseudaonidia duplex) - FLORIDA - Collected on camellia (Camellia sasanqua and C. japonica) on November 16 by A. E. Graham, on C. sasanqua on December 2 by K. P. Bragdon and on Azalea sp. by R. Knight and A. E. Graham on December 5 at Gainesville, Alachua County. Also collected on Camellia sp. on December 6 at Fernandina Beach, Nassau County, by R. King. This scale was also collected on camellia at Dover, Hillsborough County, on December 8 by V. E. Lowe, where 41 of 2,000 container plants were infested with approximately 100 scales per plant. Most adult females on stems; few on leaves. Males appear to be found on upper leaf surface along the midrib. This scale, first discovered in Louisiana in 1920, probably being introduced from Japan, is also known to occur in Hawaii, India, Philippine Islands and Argentina. Over 175 host plants have been recorded, the more important being camphor, citrus, privet, camellia, starjasmine and persimmon. (Fla. Coop. Sur.). New State record according to ARS records.

COCCIDS - OKLAHOMA - Heavy populations of Fiorinia theae on several ornamental plants in greenhouses in east central area. (Okla. Coop. Sur.). NORTH CAROLINA - Unaspis euonymi infesting euonymus in Johnston County. (Jones, Farrier). NEW MEXICO - Undetermined species of mealybugs a problem on plants in greenhouses in many areas of State. Nurserymen report control very difficult and that reinfestations occur very rapidly. (N. M. Coop. Rpt., Dec. 10). CALIFORNIA - Orthezia insignis heavy on lantana in Point Loma, San Diego County. (Cal. Coop. Rpt.).

ARBORVITAE LEAF MINER (Argyresthia thuiella) - MARYLAND - Larvae infesting foliage of several arborvitae at Rockville, Montgomery County. (U. Md., Ent. Dept.).

A SPIDER MITE (Eotetranychus lewisi) - FLORIDA - Collected on poinsettia (Euphorbia pulcherrima) at Homestead, Dade County, on November 15 by R. M. Baranowski. Also collected on same host at Deland, Volusia County, November 28, by C. R. Roberts. This mite can probably be found everywhere poinsettias are grown in the State, although it was only recently found causing damage to this host in the State. (Fla. Coop. Sur.). CALIFORNIA - Medium on poinsettias in San Diego, San Diego County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

Anthropod Pests of Livestock in West Virginia - Survey 1960 - Based on 23 veterinarian reports from 24 counties, general infestations of various livestock pests in the State were as follows: CATTLE GRUBS (Hypoderma spp.) were light to medium on cattle, while STABLE FLY (Stomoxys calcitrans) was medium and FACE FLY (Musca autumnalis) was heavy; undetermined species of LICE were light on dogs and hogs and ranged light to medium on cattle; SHEEP KED (Melophagus ovinus) was light on sheep; a NOSE BOT in sheep was light to medium; HORN FLY (Siphona irritans) was medium on cattle; FLEAS ranged medium to heavy on dogs; TABANIDS varied from light to medium on cattle and horses; MOSQUITOES and BITING MIDGES were light on various hosts, but an undetermined species of EYE GNAT was light to heavy; EAR MITES and MANGE MITES were light on dogs, while a WOOL MAGGOT was light on sheep. (W. Va. Ins. Sur.).

CATTLE GRUBS (Hypoderma spp.) - OKLAHOMA - H. lineatum larvae found in backs of most untreated cattle throughout State; average populations in most areas 8-12, maximum 25-50. (Okla. Coop. Sur.). UTAH - Hypoderma spp. present in backs of cattle in Washington County. (Knowlton, Hughes).

LICE - OKLAHOMA - Moderate infestations of Haematopinus eurysternus reported from most areas of State. Heavy populations of Bovicola bovis found on small numbers of animals in Logan and Pawnee Counties. (Okla. Coop. Sur.). UTAH - Number of herds in Washington County treated. Also 250 head in Junction area of Piute County treated. (Knowlton).

TICKS - TEXAS - Ixodes scapularis heavy on deer killed in Brazos and Grimes Counties. (Newton). Specimen of Dermacentor sp. collected from a coyote in Bee County. (Price). OKLAHOMA - Dermacentor albipictus common on horses, cattle and deer in eastern and southern areas of State. Several thousand per horse in McCurtain County. Rhipicephalus sanguineus infesting dogs and homes in Oklahoma, Payne, Tulsa and Muskogee Counties. (Okla. Coop. Sur.). CALIFORNIA - Heavy populations of all stages of R. sanguineus on dog in a house and on shrubbery in Bonita, San Diego County. (Cal. Coop. Rpt.).

STORED-PRODUCT INSECTS

INDIAN-MEAL MOTH (Plodia interpunctella) - TEXAS - Heavy surface infestation of larvae in large storage elevator in Brazoria County. (Garner).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - NORTH CAROLINA - Infesting stored wheat in Lincoln County. (Stoudemire, Farrier).

YELLOW MEALWORM (Tenebrio molitor) - TEXAS - Heavy infestation in grain elevator in Galveston County. (Dupre).

MISCELLANEOUS INSECTS

ELM LEAF BEETLE (Galerucella xanthomelaena) - OKLAHOMA - Causing concern in many areas of State by entering homes in substantial numbers. (Okla. Coop. Sur.).

OLD-HOUSE BORER (Hylotrupes bajulus) - LOUISIANA - Found in a home at Baton Rouge, East Baton Rouge Parish; a new parish record. (Spink).

SHOT-HOLE BORER (Scolytus rugulosus) - CALIFORNIA - Medium populations in a house in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.).



A BOSTRICHID (Stephanopachys substriatus) - CALIFORNIA - Light adult infestation in processed wood in retail store in San Bruno, San Mateo County. (Cal. Coop.Rpt.).

A CERAMBYCID (Neoclytus acuminatus) - TEXAS - Several adults collected in den in a Harris County home, apparently emerging from cypress paneling. (Newton).

DEPRESSED FLOUR BEETLE (Palorus subdepressus) - CALIFORNIA - Medium in chicken manure in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

EARWIGS - LOUISIANA - Undetermined species continue to be reported invading houses in southern area of State. (Spink).

BROWN-BANDED ROACH (Supella supellectilium) - MARYLAND - Infesting several homes in Baltimore area and in Prince Georges County. (U. Md., Ent. Dept.).

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Troublesome and entering homes at Farmington, Davis County. (Knowlton).

CLOVER MITE (Bryobia praetiosa) - PENNSYLVANIA - Complaints of home invasions continue to be received from most areas of State. (Udine).

LIGHT TRAP COLLECTIONS

	<u>Pseudaletia unipuncta</u>	<u>Feltia subterranea</u>	<u>Laphygma frugiperda</u>
FLORIDA			
Quincy 11/29-12/5	2	1	
Monticello 12/2-8	1	2	
LOUISIANA			
Baton Rouge 12/9-15	7	3	1

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported October 31 by the Plant Quarantine Division, ARS, USDA, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month of October. They do not necessarily represent interceptions taken during the month, but do include any of interest from recent months that were not previously reported.

A STENOMID (Stenoma catenifer Wlsm.) in baggage from Brazil at Los Angeles, California.

TERMITES (Coptotermes niger Snyder, Subulitermes microsoma (Silv.), Heterotermes convexinotatus (Snyder) and Nasutitermes corniger (Motsch.)) in a cargo of "rosewood" logs from Brazil at New Orleans, Louisiana.

Pupae of a PIERID (Pieris sp., probably brassicae (L.)) adhering to conex boxes from Greece at New Orleans. (Although the pupae were dead, this interception illustrates a method of potential spread by P. brassicae).

WHITE GARDEN SNAIL (Theba pisana (Muller)) 7 times on general cargo from Mediterranean area destined for Alabama, Louisiana and Virginia; at Wilmington, Delaware, one time; at New Orleans 2 times; and at New York, New York, 4 times. Also at Duluth, Minnesota, one time in an incinerator area.

KHAPRA BEETLE (Trogoderma granarium) 6 times; in stores at Honolulu, Hawaii, one time; at Houston, Texas, one time; at Charleston, South Carolina, one time; and at Baltimore, Maryland, one time. Also in cargoes of "Myrobalan" nuts destined for Virginia and Kentucky at Norfolk, Virginia, 2 times.

ORIENTAL FRUIT FLY (Dacus dorsalis Hend.) in baggage from Honolulu at San Pedro, California.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) 27 times from European countries destined for Ohio, Illinois, Pennsylvania, New York, New Jersey, Michigan and Connecticut. Also 15 more times in stores at New York.

A CRAMBID (Zeadiatraea lineolata (Wlk.)) (a species of considerable importance to corn in Central America) in green corn in baggage at Miami, Florida.

A SNAIL (Achatina fulica Fer.) in baggage destined for California at Honolulu.

A THRIPS (Frankliniella liliivora Kurosawa) on lily bulbs in cargo from Japan (a second interception of this species by the Plant Quarantine Division) for general distribution at New York.

PINK BOLLWORM (Pectinophora gossypiella) 3 times in baggage from Mexico; at Brownsville, Texas, 2 times and at Laredo, Texas, one time.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

LESSER PUMPKIN FLY (Dacus ciliatus (Loew))

**Economic Importance:** This fruit fly is a common pest of cucurbits throughout a large part of Africa and in India, but apparently not as serious as the melon fly (Dacus cucurbitae) in areas of India where both species occur. Heavy infestations of D. ciliatus have been reported in South Africa and serious damage is thought to occur in Egypt, where the damage caused by this pest was most likely mistaken for the similar injury caused by the fly (D. longistylus) in years prior to 1953. D. ciliatus was first reported in India in 1914 and was first collected from Ombo, Upper-Egypt, in February 1953.



1



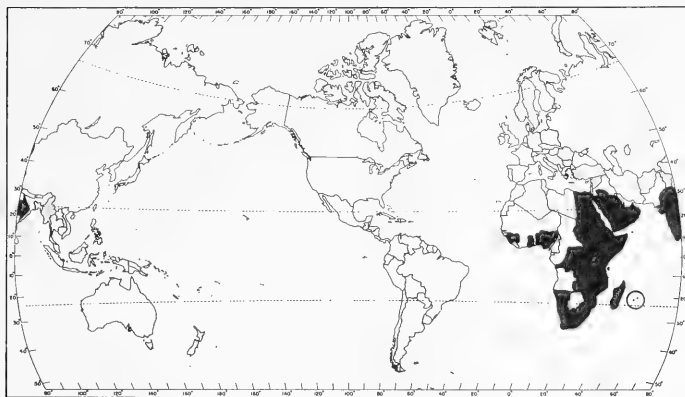
2

1 - Longitudinal Section of Ivygourd Fruit Showing Larvae

2 - Transverse Section of Fruit Showing Eggs

**Distribution:** Occurs throughout most of Eastern and Central Africa, Malgache Republic, Mauritius, the Arabian Peninsula and India.

**Hosts:** Cucurbits are the principal hosts, with several other crops apparently of less importance. Recorded on milkweed, redpepper, watermelon,

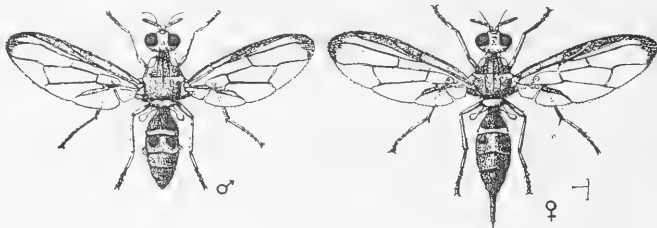


General Distribution of Dacus ciliatus

citrus, ivy gourd, muskmelon, Cucumis metuliferus, gooseberry gourd, cucumber, winter squash, cushaw, pumpkin, yellowflower gourd, Gliricidia sepium, calabash gourd, Singkwa towel gourd, common tomato, balsampear, Momordica involucreta, M. schimperiana, bluecrown passionflower, bean chayote and edible snakegourd.

Life History and Habits: Biology as recorded in State of Madras, southern India, is as follows: Preoviposition period lasts approximately 4 days. Eggs are deposited in a hole made in the fruit by the female, often near the stalk. As many as 8 eggs are deposited in each hole. Generally, however, one hole contains 3-4 eggs. When more than 10-12 eggs are deposited in a single fruit, larvae do not obtain sufficient nourishment and subsequent pupae and adults are undersized. Mature larvae drop to the ground, either in shriveled skins of infested fruits or before these fall. Larvae leave infested fruits and enter the soil for pupation, the depth varying from 0.5 to 2 inches. Adults emerge between 8 and 10 a.m. Infested fruits are first ridged by brown, dried liquid over the oviposition puncture. After 2 days, a hollow develops at the point of oviposition and the surrounding tissues become soft and brown; after 4-5 days, the whole fruit becomes discolored, unless it contains only a few larvae, and falls. Under laboratory conditions, in September and October, when the mean shade temperature was 62.2-89.3° F. and the relative humidity 69.1-78.9 percent, the egg, larval and pupal stages lasted 2-4, 4-6 and 8-10 days, respectively. Development period lasts 15-17 days, and there are 6 generations a year.

Description: ADULTS - Female: Body more or less dark fulvous yellowish-brown; face with 2 large black spots and 1 brown spot on the peristome near the lower part of the eyes; thorax with the scutum a little darker than the rest of the body, with a median presutural line and 2 submedian postsutural black spots, which may be more or less evident (very evident in alcoholic specimens, almost invisible in those preserved dry); humeral calli, suture, pleurae opposite the suture, hypopleural spot and the scutellum yellowish-white or ochraceous. Wings are illustrated below. Scapulars in 2 pairs. Seventh segment from above, 1.5 mm.; ovipositor from above, 1.56 mm. in length. Length of body 6-7 mm. Male: Sides of third abdominal segment provided with a posterior row of setae. Forceps of copulatory organ with the outer side of the lower lamina longer than the inner, attenuated and arcuate. EGG - About 2.5 mm. in length, shiny white, slightly curved, cylindrical and narrow at one end. LARVA - Mature larva measures about 8 mm. in length and 1.4 mm. in width. Mandibular hooks of mouth parts provided each with a preapical tooth and oral lobes, which are well developed; each has 15 laminated ridges. Several dorsal spines present on first 3 postcephalic segments and few on 4th and 5th. Each anterior spiracle provided with 14-16 lobes. PUPARIUM - Elliptical and brownish; about 4.5-5.5 mm. long and 2-2.5 mm. wide. (Prepared in Survey and Detection Operations in Cooperation with other ARS Agencies). CEIR 10(52):12-23-60.



Adults of Dacus ciliatus

Major references: 1. Bezzi, M. 1915. Bul. Ent. Res. 6(2):85-101. 2. Azab, A. K. and Kira, M. T., 1954. Soc. Fouad I<sup>er</sup> d'Ent. Bul. 38:379-382. 3. Cherian, M. C. and Sundaram, C. V., 1939. Indian Jour. Agr. Sci. 9(1):127-131. (Figures - except map - from Cherian and Sundaram).



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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.



## COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SOUTHWESTERN CORN BORER survey completed in Missouri. Damage evident throughout southwest area, with high percent of girdled stalks 22.4 compared with 13.6 in 1959. CORN ROOTWORM survey in eastern and southern Nebraska showed western corn rootworm (Diabrotica virgifera) to be the most predominant species in the major corn-producing areas of State, with few exceptions. WINTER GRAIN MITE damaging in small grains in central and north central Texas; treatments underway. (p. 1153).

CITRUS RUST MITE population in Florida highest for mid-December in 10 years of record. (p. 1154).

CORRECTIONS (p. 1155).

INSECT DETECTION: Camphor scale collected for first time in Pinellas, Escambia and Polk Counties, Florida. (p. 1154).

Status of EUROPEAN CORN BORER in 1960. (pp. 1156-1165).

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Reports in this issue are for week ending December 23, unless otherwise indicated.

WEATHER OF THE WEEK ENDING DECEMBER 26

Widespread, mostly moderate to locally heavy, precipitation accompanied a low-pressure system as it moved from eastern Oklahoma at the beginning of the period, northeastward in advance of a sharp change to much colder weather, and passed over Maine in the early morning hours of the 22nd. This precipitation occurred as rain in the South and in the Atlantic coastal districts and as snow in the North, with snowfalls of 4 inches to locally over a foot in the higher elevations from West Virginia to Maine.

The very cold Arctic air that followed in the wake of the storm overspread the entire portion of the country from the Great Plains to the Atlantic and gulf coast, bringing the coldest weather of the season so far. Zero temperatures occurred as far south as Tennessee, and freezing extended to Rio Grande City in the lower Rio Grande Valley of Texas and to the vicinity of Lake Okeechobee in southern Florida. Minimum temperatures were zero and below on five days in the Minnesota area and on about 3 days (22nd to 24th) in northern sections eastward to New England and northwestern New Jersey. At many stations in Minnesota and the eastern Dakotas, the temperatures did not rise above zero on the 22nd. In Georgia, freezing occurred over the entire State on 6 days and in northern and central Florida on 4 or more days. Some of the extreme low temperatures were  $-28^{\circ}$  at Cascade, Iowa, and  $-25^{\circ}$  at Joliet, Illinois, on the 23rd;  $-9^{\circ}$  at Louisville, Kentucky, and  $-3^{\circ}$  at Crossville, Tennessee, on the 22nd; and  $-23^{\circ}$  at Oakland, Maryland, and  $-17^{\circ}$  at West Cummington, Massachusetts on the 23rd. The  $-9^{\circ}$  at Louisville, Kentucky, was the lowest December temperature ever recorded in that city since records began there in 1872. It was  $20^{\circ}$  at Mobile, Alabama, and  $32^{\circ}$  at Tampa and  $39^{\circ}$  at Miami, Florida, on the morning of the 22nd. Preliminary reports indicate that freeze damage in Florida was confined principally to tender vegetables and was mostly light in the Rio Grande Valley of Texas, although tomatoes were hard-hit in the Rio Grande City area. Southerly winds accompanied a depression moving eastward across the northern interior and brought back normal temperatures to the region east of the Rocky Mountains during the weekend, and most of the country enjoyed fair weather and moderate temperatures on Christmas except some of the more northern areas. In contrast to the severe cold weather in the eastern portion of the country, the Far West, principally the Far Southwest and Great Basin area, experienced generally fair weather and above-normal warmth due to a stagnant, moderately high pressure area remaining over the Great Basin and southern Idaho until the end of the period. Rain, snow, and freezing rain, however, occurred on several days in the Pacific Northwest and there was much fog in the Pacific States, particularly in Washington. Temperatures for the week averaged much lower than usual over the eastern two-thirds of the country, with departures of more than  $10^{\circ}$  below normal from the middle and Upper Mississippi Valley and Great Lakes region to southern Florida and the middle and south Atlantic coast. In the Far West, temperatures ranged from near normal to mostly  $5^{\circ}$  above normal, except slightly below in interior valleys of the Pacific States.

Precipitation generally ranged from about 1/2 to locally over 1 inch in western sections of Washington and Oregon and in the eastern area from the middle gulf coast and Florida northwestward to eastern Canada. Elsewhere over the country, totals were less than 1/2 inch, with no measurable amounts in a large far southwestern area from California and southeastern Oregon to northeastern Texas and central Arkansas. Snow cover Tuesday morning was mostly limited to the higher elevations of the Far West and a strip across the northern third of the country as far south as central Nebraska, south central Indiana, and West Virginia. Moderate temperatures over the weekend had reduced the cover east of the Rockies and above-normal warmth in the Far West caused the limited snow cover to disappear from many valleys. Some of the greater depths are 70 inches at Mt. Baker Lodge, Washington; 39 inches at Soda Springs, California; 34 inches at Silver Lake, Utah; 26 inches at Fox Park, Wyoming; 22 inches at Boonville, New York; and 15 inches at Greenville, Maine. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

SOUTHWESTERN CORN BORER (Zea diatraea grandiosella) - MISSOURI - 1960 survey completed. Percent of stalks girdled higher in 1960 than in the past several years. Damage evident through southwest area. The high county average in 1959 was 13.6 as compared with 22.4 percent in 1960. A total of 24 counties was surveyed. The average percent of girdled stalks per county was as follows: Barry 12.4, Barton 6, Bates 0.8, Benton 0.4, Cass 0, Cedar 8.4, Christian 6.4, Dade 5, Greene 8, Henry 0.8, Hickory 3.6, Jasper 22.4, Johnson 0, Lawrence 9.2, McDonald 12.4, Newton 5.6, Oregon 7, Ozark 2, Pettis 0, Polk 8, St. Clair 0.4, Stone 5.2, Taney 5.6 and Vernon 6.8. (Munson).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - D. virgifera, D. longicornis and D. undecimpunctata howardi found in adult survey conducted this season in all counties in eastern and southern half of State. D. virgifera was the most predominant species in the major corn-producing areas of the State with few exceptions. This species accounted for about 68 percent of the total adult population. D. longicornis dominates the northeastern crop district where 73 percent of the adults composed this species. D. undecimpunctata howardi had small spotted infestations in scattered areas of State. (Bergman).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - TEXAS - Light adult infestations in various oat fields examined in Blanco County. (Garner).

GREENBUG (Toxoptera graminum) - TEXAS - Infestations continue very light and no damage apparent to small grains in central and north central counties. (Chada).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Damaging populations appearing in many small grain fields throughout central and north central areas. Treatment underway by many farmers. (Chada).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Medium infestations in central and southwest Arizona barley. (Ariz. Coop. Sur.).

PEA APHID (Macrosiphum pisi) - ARIZONA - Light populations in alfalfa in central area. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Although a few fields still have medium populations, infestations now generally low statewide. (Ariz. Coop. Sur.).

FRUIT INSECTS

GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Eggs abundant on stone fruit tree buds and twigs in Dona Ana County. (N. M. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Heavy local infestations in Gillespie County. Larvae have migrated from pecans into the soil. (Garner).

HICKORY SHUCKWORM (Laspeyresia caryana) - TEXAS - Moderate to heavy infestations in several areas of Montague County. (Roberts).

Citrus Insect Situation in Florida - Mid-December 1960 - PURPLE SCALE (Lepidosaphes beckii) infested 64 percent of groves inspected. Although activity increased, populations will rise only slightly from the present low level. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 68 percent of groves. Activity dropped from the high range and will hold near the current level during January. Populations generally will decline after December but 4 districts may have a few moderately heavy infestations during the next 4 weeks. CITRUS RED MITE (Panonychus citri) infested 48 percent of groves. A downward trend in

activity recently occurred. No districts show high activity and infestations continue to be very spotty. Statewide population below average for this time of year. CITRUS RUST MITE (Phyllocoptruta oleivora) infested 86 percent of groves. For first time in 2 months, activity has shown a downward trend, but activity is still very high throughout State and is expected to remain in the high range for another month. Statewide population is the highest for mid-December in 10 years of record. TEXAS CITRUS MITE (Eutetranychus banksi) in 27 percent of groves, none heavily infested. Little change is expected. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

#### TRUCK CROP INSECTS

NOCTUIDS - CALIFORNIA - Medium infestations of larvae of Proxenus mindara and Pseudaletia unipuncta in soil in strawberry plantings in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

#### FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Activity continued to be slow with only 4 active spots in State. Latest infestation adjacent to a severely pruned electric line right-of-way. (Tex. For. Pest. Comm., Nov. Rpt.)

A COCCID (Matsucoccus fasciculensis) - CALIFORNIA - Severely damaging a 500-acre stand of ponderosa pines in groups up to 50 trees in Hume Lake area in Sequoia National Park, a high value recreational area. (U. S. F. S.).

A PINE SEED MOTH (Hedulia injectiva) - CALIFORNIA - Damaging Jeffrey pine cones in South Fork area and the Big Valley district of Modoc National Forest. (R. W. Jessen).

APHIDS - NEW MEXICO - Populations of an aphid (probably Anuraphis helichrysi) very abundant on potted chrysanthemums in greenhouses in several areas of State, week ending December 17. Macrosiphum rosae light to moderate on roses in nursery in Otero County. (N. M. Coop. Rpt.). Light spotted infestations of Myzus persicae on carnations in greenhouses in southern counties. (N. M. Coop. Rpt., Dec. 17). CALIFORNIA - Heavy population of Neosymydobius annulatus on birch in a property in El Cajon, San Diego County. (Cal. Coop. Rpt.).

WHITEFLIES - NEW MEXICO - Adults and nymphs abundant on foliage of poinsettias in greenhouse in Otero County. (N. M. Coop. Rpt., Dec. 17.).

A GROUND PEARL (Margarodes rileyi) - FLORIDA - Collected by the hundreds on roots of Morris thatchpalm (Thrinax parviflora) on a golf course on Stock Island November 17, 1960. (Knowles, Woodruff). First host record for the scale in Florida. (Fla. Coop. Sur.).

CAMPBOR SCALE (Pseudaonidia duplex) - FLORIDA - Collected on Camellia japonica at Pinellas Park, Pinellas County, December 6 (Bingaman, Miller); at Pensacola, Escambia County, December 8 (Albritton, Bragdon); and on azalea at Winter Haven, Polk County, December 7. (Denmark, McAulay et al.). New county records.

ITALIAN PEAR SCALE (Epidiaspis piricola) - CALIFORNIA - Heavy population on hawthorn in Santa Rosa, Sonoma County and light on plum in Orangevale, Sacramento County. (Cal. Coop. Rpt.).

#### INSECTS AFFECTING MAN AND ANIMALS

LICE - UTAH - In Emery County, 3,500 cattle dipped and lice abundant in additional herds. (Knowlton). TEXAS - Moderate infestations of Bovicola crassipes on goats from auction sale in Bexar County. (White).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - NORTH CAROLINA - Two infestations found in Onslow County and one in Brunswick County. (Bowen).

A CLOTHES MOTH - ARIZONA - An undetermined species a problem in houses in the Phoenix area of Maricopa County and in Yuma County. (Ariz. Coop. Sur.).

EARWIGS - TEXAS - Undetermined species continue to be a nuisance in homes in Bryan-College Station area of Brazos County. (Newton).

A BLISTER BEETLE (*Meloe* sp.) - CALIFORNIA - Heavy populations hibernating among dry cottonwood leaves in La Grange, Stanislaus County. (Cal. Coop. Rpt.).

CORRECTIONS

INTERCEPTIONS OF SPECIAL INTEREST AT U. S. PORTS OF ENTRY - The following interceptions listed for Wilmington, Delaware, in volume 10 should be for Wilmington, North Carolina. Khapra beetle (*Trogoderma granarium*) - No. 31, page 724; No. 48, page 1105; No. 49, page 1117. A bruchid (*Bruchus lentis*) - No. 32, page 750. White garden snail (*Theba pisana*) - No. 52, page 1148.

CEIR 10 (51): 1132 - CHINCH BUG (*Blissus leucopterus*) - KANSAS - Should read, "Annual hibernation survey completed. Collections of one-square-foot samples of bunch grass made during November and December."

CEIR 10 (46): 1078 - APHIDS - UTAH - Should read, "*Periphyllus salicicorticis* infesting willows below ground surface in Big Cottonwood Canyon, Salt Lake County, August 27, 1960. (Smith, Knowlton). According to ARS records, new to the State."

LIGHT TRAP COLLECTIONS

	Agrotis ippsilon	Feltia subterranea	Spodoptera exigua
ARIZONA Mesa 12/9-23			2
SOUTH CAROLINA Charleston 12/12-18	2	1	

STATUS OF THE EUROPEAN CORN BORER IN 1960

Survey Data Provided by State Agricultural Agencies,  
Compiled and Summarized by Survey and Detection Operations,  
Plant Pest Control Division, Agricultural Research Service,  
United States Department of Agriculture

Cooperating agricultural agencies in 18 states reported on surveys conducted in their states to determine the abundance and distribution of the European corn borer (*Pyrausta nubilalis* (Hubner)) in 1960. All survey data, summaries or records of field observations were submitted to Survey and Detection Operations, Plant Pest Control Division office in Washington, D. C., for processing. After processing, the material was reviewed by personnel of the Entomology Research Division, ARS. This is a compilation of the information submitted by the State agencies.

Distribution

Spread of the European corn borer during 1960 was very limited. A total of only 6 new counties was reported from the states of Georgia, North Carolina and Virginia. The 6 new counties reported during 1960 are a considerable decrease from the 13 new counties reported in 1959 and the 58 new counties and parishes reported in 1958. Special surveys were reported from New Mexico, Texas and Wyoming during 1960, all with negative results.

Counties reported as infested for the first time in 1960 are as follows:

<u>Georgia</u>	<u>North Carolina</u>	<u>Virginia</u>
Habersham	Union	Bath
Towns		
Union		
White		

Abundance

The 1960 European corn borer survey was conducted during the late summer and fall of the year. The survey is designed to measure the fall population of European corn borer larvae. The participating states were encouraged to time the surveys to include a high percentage of mature larvae whenever possible. In all cases, except for some minor differences in compiling data, the accepted survey methods were used.

The survey was continued on a district basis whenever possible in 1960. A district is usually a group of counties within a state, in some cases being based on the Agricultural Marketing Service Crop Reporting Districts. However, some of the states are being considered as a single district in this report since they prefer conducting a county survey. The population levels for 1959 and 1960 are shown in Table 1 and Table 2, with the district or county counts being reported in the latter table.

Population levels of the European corn borer were generally higher than in 1959 in the Central States. Increases were most notable in Iowa, Wisconsin, Minnesota, North Dakota and South Dakota. In North Dakota, the counts in Cass and Richland Counties (District II), were the heaviest ever recorded; 474 borers per 100 plants in 1960 compared with 125 in 1959. Counts in South Dakota showed increases in all

districts, with the number of borers per 100 plants averaging 172 for the State compared with 51 in 1959. The highest counts were recorded in the southeastern and east central districts of South Dakota, being 220 and 261, respectively. The most notable increases recorded in Minnesota in 1960 were those in the west central and southwest districts, where counts were reported as 173 borers per 100 plants in the west central district and 280 in the southwest. The greatest increases in Wisconsin appeared to be in the west central, central and south central districts, with counts averaging 120, 215 and 135 borers per 100 plants, respectively. Increases were also recorded in five other Wisconsin districts. In Iowa, the greatest increase in populations occurred in District VII, where counts were 286 borers per 100 plants, compared with 30 in 1959. Counts also increased in Districts II, III, V and VIII in Iowa to over 100 borers per 100 plants, with the overall state average being 124 compared with 50 in 1959. The greatest increase recorded in Missouri was in District IX (southeastern area), where counts averaged 154 borers per 100 plants compared with 42 in 1959. The overall populations in other Central States were generally comparable with those of 1959 except in Illinois, where populations were slightly higher.

In the Eastern States, populations were higher than those encountered in 1959 in Maryland, Pennsylvania and West Virginia, but lower in Delaware. The average number of borers per 100 plants was 262 in Delaware, 136 in Maryland, 88 in Pennsylvania and 58 in West Virginia, compared with counts of 394, 114, 52 and 31, respectively, for the same states in 1959. Highest populations were recorded in Sussex County, Delaware, and Dauphin and Mifflin Counties, Pennsylvania, where counts per 100 plants were 415, 387 and 372, respectively.

Surveys were conducted in Michigan and Virginia again in 1960, but population counts were not included in the United States average since they were not comparable with the 1959 survey. However, the survey in those two states indicates that populations have increased.

The survey in Arkansas indicates an increase in populations, the average count being 65 borers per 100 plants compared with 54 in 1959 in the two comparable districts surveyed.

For all states reporting, based on comparable districts or counties surveyed, the average number of borers per 100 plants increased from 86 in 1959 to 129 in 1960. The average for the Central States was 133 in 1960 compared with 67 in 1959, and the average for the Eastern States (Delaware, Maryland, Pennsylvania, West Virginia) was 136 in 1960 compared with 148 in 1959.

A summary of the 1959 and 1960 surveys is shown on Table 1 by states. State summaries are shown on Table 2. Accompanying maps show districts surveyed, approximate population levels, and counties infested for the first time in 1960.

Table 1. Summary by States of European Corn Borer Abundance in Corn, Fall of 1960, Compared With Data for 1959

States	1959			1960			Comparable Districts or Counties		
	Average No. of Borer Districts Surveyed	No. of Counties Surveyed	No. of Borer Districts Per 100 Plants	Average No. of Borer Districts Surveyed	No. of Counties Surveyed	No. of Borer Districts Per 100 Plants	1959	1960	Borers Per 100 Plants
<b>Eastern</b>									
Delaware	1	394	3	1	262	3	1	394	262
Maryland	3	114	23	3	136	23	3	114	136
Pennsylvania	1	54	36	1	83	41	35	52	88
West Virginia	1	29	17	1	58	17	13	31	58
Total	6	79	6	6	84	84			
Average $\frac{1}{}$									
<b>North Central</b>									
Illinois	1	77	40	1	101	40	40	77	101
Indiana	12	65	91	12	61	87	12	65	61
Iowa	12	50	99	12	124	99	12	50	124
Kansas	4	38	36	3	68	25	1	72	77
Minnesota	6	35	63	6	107	63	6	35	107
Missouri	8	36	46	8	61	46	8	36	61
Nebraska	8	116	66	8	119	69	8	116	119
North Dakota	1	125	2	2	372	4	1	125	474
Ohio	1	33	33	1	72	33	33	73	72
South Dakota	6	51	40	6	172	42	6	51	172
Wisconsin	9	32	58	9	93	58	9	32	93
Total	68	574	68	68	666	666			
Average $\frac{1}{}$									
<b>Southern</b>									
Arkansas	4	55	18	4	63	19	2	54	65
<b>United States</b>									
Total	78	671	78	78	669	669			
Average $\frac{1}{}$									
<b>States Surveyed But Not Included in U. S. Average</b>									
Michigan	1	11	6	1	27	19			
Virginia	2	182	20	2	216	8			

$\frac{1}{}$  Weighted averages based on districts surveyed.



Table 2 - European Corn Borer Abundance in Corn,  
Fall of 1960, Compared With Data for 1959

State	:Average Number: :of Borers Per : :100 Plants :		State	:Average Number :of Borers Per :100 Plants	
	:1959 :	1960 :		:1959 :	1960
<u>Arkansas</u> (Ark. Ins. Sur.)			<u>Illinois (cont'd)</u>		
North Central	32	22	Moultrie	9	29
Northeast	68	58	Ogle	211	125
East Central	80	97	Peoria	53	160
Southeast	40	71	St. Clair	9	38
State Mean	55	63	Sangamon	14	90
State mean comparable districts (2)	54	65	Vermilion	11	41
			Whiteside	184	76
<u>Delaware</u> (Agr. Exp. Sta.)			Will	75	92
Kent	427	239	Winnebago	83	131
New Castle	282	132	Woodford	121	205
Sussex	473	415	State Mean	77	101
State Mean	394	262	<u>Indiana</u> (Ext. Ser., Exp. Sta.)		
<u>Illinois</u> (Natural History Survey, Ext. Ser.)			North Northwest	50	64
Adams	175	207	North North Central	93	192
Boone	64	75	North Northeast	208	76
Brown	104	91	Northwest 1/	49	11
Bureau	208	36	North Central	107	73
Champaign	3	13	Northeast	72	125
Christian	36	114	Southwest 1/	10	12
Clark	27	20	South Central	21	11
De Kalb	200	57	Southeast	64	18
Du Page	59	65	South Southwest	23	37
Effingham	45	56	South South Central	30	56
Greene	69	234	South Southeast	52	59
Hancock	64	278	State Mean	65	61
Henderson	87	136	<u>Iowa</u> (State Dept. of Agr.; Ext. Ser.; Exp. Sta.; Ent. Res. Div., ARS, USDA)		
Iroquois	61	122	District I	245	235
Jasper	16	49	District II	78	181
Jefferson	4	15	District III	15	112
Jo Daviess	114	68	District IV	123	165
Kankakee	107	59	District V	37	149
Knox	108	135	District VI	52	56
Lake	39	24	District VII	30	286
La Salle	120	55	District VIII	26	143
Lawrence	29	41	District IX	47	44
Livingston	85	129	District X	23	66
Logan	12	54	District XI	16	26
McDonough	65	193	District XII	18	30
McLean	118	247	State Mean	50	124
Macon	28	29			
Maccoupin	127	192			
Madison	33	111			
Mercer	100	132			

1/ Areas not completely surveyed in 1960.

Table 2 - (Cont'd)

State	Average Number: of Borers Per 100 Plants		State	Average Number of Borers Per 100 Plants	
	1959	1960		1959	1960
<u>Kansas</u> (Ins. Sur.)			<u>Missouri</u> (cont'd)		
Northeast	72	77	District V	31	21
North Central	33	66	District VI	24	79
Southeast	8	-	District VII	12	28
East Central	<u>40</u>	<u>60</u>	District IX	<u>42</u>	<u>154</u>
State Mean	38	68	State Mean	36	61
State mean comparable districts (1)	72	77	<u>Nebraska 2/</u> (Agr. Exp. Sta., Ext. Ser., Ins. Sur.)		
<u>Maryland</u> (Agr. Ext. Ser., Ins. Sur.)			North	79	71
Eastern Shore	191	209	Northeast	223	191
Southern area	68	81	Northwest	25	3
Western and Central areas	<u>62</u>	<u>93</u>	Central	158	227
State Mean	114	136	East	170	222
			South	161	111
			Southeast	66	106
			Southwest	<u>42</u>	<u>18</u>
			State Mean	116	119
<u>Michigan</u> (Ext. Ser.)			<u>North Dakota</u> (State Dept. of Agr.)		
State Mean	11	27	District I	-	269
(Survey in 1959 conducted in 6 counties; survey in 1960 conducted in 19 counties)			District II	<u>125</u>	<u>474</u>
			State Mean	125	372
<u>Minnesota</u> (State Dept. of Agr.)			State mean comparable districts (1)	125	474
West Central	19	173			
Central	20	60	<u>Ohio</u> (Exp. Sta.; Ext. Ser.; ARS, USDA)		
East Central	22	34	<u>Northwestern Counties</u>		
Southwest	119	280	Allen	88	74
South Central	42	65	Defiance	33	61
Southeast	<u>22</u>	<u>30</u>	Fulton	102	65
State Mean 1/	35	107	Hancock	62	30
			Hardin	29	89
<u>Missouri 2/</u> (Ext. Ser., Ins. Sur.)			Henry	100	89
District I	47	56	Lucas	68	97
District II	43	54	Paulding	64	284
District III	56	64	Putnam	110	115
District IV	35	34	Van Wert	71	41
			Williams	51	25
			Wood	45	49

1/ State mean for 1960, based on average of all stops (315), was 92.

2/ Crop Reporting Districts.

(Ohio cont'd on page 1161)

Table 2 - (Cont'd)

State	:Average Number: :of Borers Per : :100 Plants :		State	:Average Number: :of Borers Per : :100 Plants :	
	:1959 :	:1960 :		:1959 :	:1960 :
<u>Ohio (cont'd)</u>			<u>Pennsylvania (cont'd)</u>		
<u>West Central Counties</u>			Juniata	49	128
Auglaize	18	49	Lancaster	55	59
Champaign	18	47	Lawrence	55	19
Clark	28	42	Lebanon	30	254
Darke	176	136	Lehigh	68	103
Logan	17	48	Luzerne	23	39
Mercer	107	64	Lycoming	17	21
Miami	72	59	Mercer	26	45
Shelby	11	218	Mifflin	38	372
Union	38	86	Montgomery	151	95
			Northampton	77	103
<u>Central Counties</u>			Northumberland	-	54
Delaware	135	76	Perry	36	73
Fayette	14	2	Schuylkill	64	59
Franklin	41	22	Snyder	58	58
Madison	14	1	Somerset	30	13
Pickaway	83	15	Sullivan	-	4
			Union	12	34
<u>Southwestern Counties</u>			Warren	9	29
Butler	100	24	Washington	74	61
Clinton	78	53	Westmoreland	52	56
Greene	34	6	Wyoming	30	21
Montgomery	161	45	York	56	62
Preble	283	104			
Warren	59	179	State Mean	54	83
<u>Northeastern County</u>			State mean comparable		
Wayne	91	79	counties (35)	52	88
State Mean	73	72			
			<u>South Dakota</u>		
<u>Pennsylvania</u>			(Agr. Exp. Sta.,		
(State Dept. of Agr.)			Ext. Ser.)		
			North Central	6	90
Adams	58	71	Northeast	21	140
Armstrong	26	47	Central	54	140
Beaver	-	46	East Central	97	261
Berks	115	253	Southeast	120	220
Bucks	92	99	South Central	10	182
Butler	31	40			
Centre	21	27	State Mean	51	172
Chester	162	132			
Columbia	-	25			
Crawford	13	21	<u>Virginia</u>		
Cumberland	51	68	(Ins. Sur.)		
Dauphin	23	387			
Delaware	-	88	Northern District 1/	213	236
Erie	1	14	Southwestern District 1/	151	147
Fayette	50	19			
Franklin	85	177	State Mean	182	216
Fulton	129	-			
Greene	-	81			
Indiana	65	37			

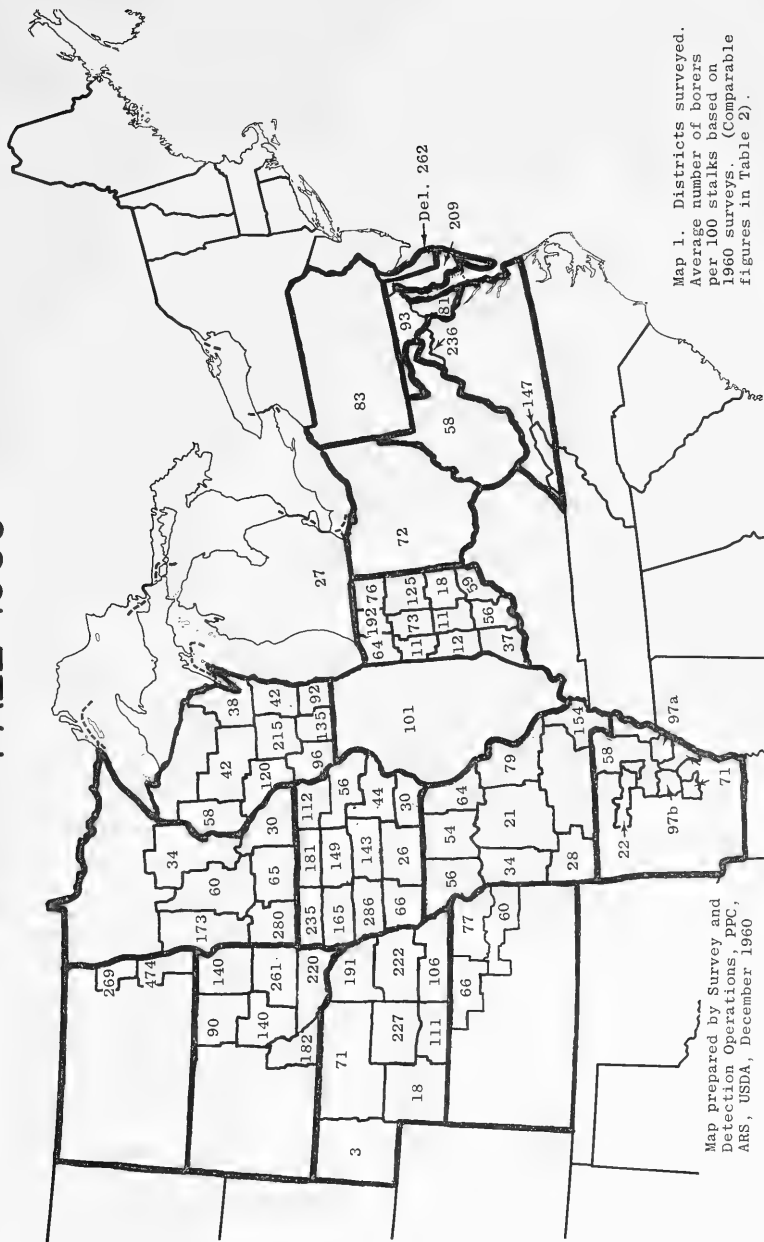
1/ Districts in 1959-60 not comparable.

Table 2 - (Cont'd)

State	:Average Number: :of Borers Per : :100 Plants :		State	:Average Number :of Borers Per :100 Plants	
	:1959 :	1960 :		:1959 :	1960
<u>West Virginia</u> (Exp. Sta.)			<u>Wisconsin</u> (State Dept. of Agr.)		
Berkeley	83	82	Northwest	26	58
Braxton	5	-	North Central	10	42
Hancock-Ohio-Brooke	64	59	West Central	11	120
Clay	12	6	Central	29	215
Greenbrier	31	3	Southwest	48	96
Hampshire	19	70	South Central	40	135
Hardy	22	108	Southeast	63	92
Harrison	39	106	East Central	28	42
Jefferson	-	104	Northeast	<u>37</u>	<u>38</u>
Kanawha	33	-	State Mean	32	93
Lewis	-	23			
Monongalia	16	174			
Monroe	18	20			
Nicholas	Trace	5			
Pleasants	27	3			
Preston	46	42			
Wood	<u>20</u>	<u>70</u>			
State Mean	29	58			
State mean comparable counties (13)	31	58			

# EUROPEAN CORN BORER ABUNDANCE

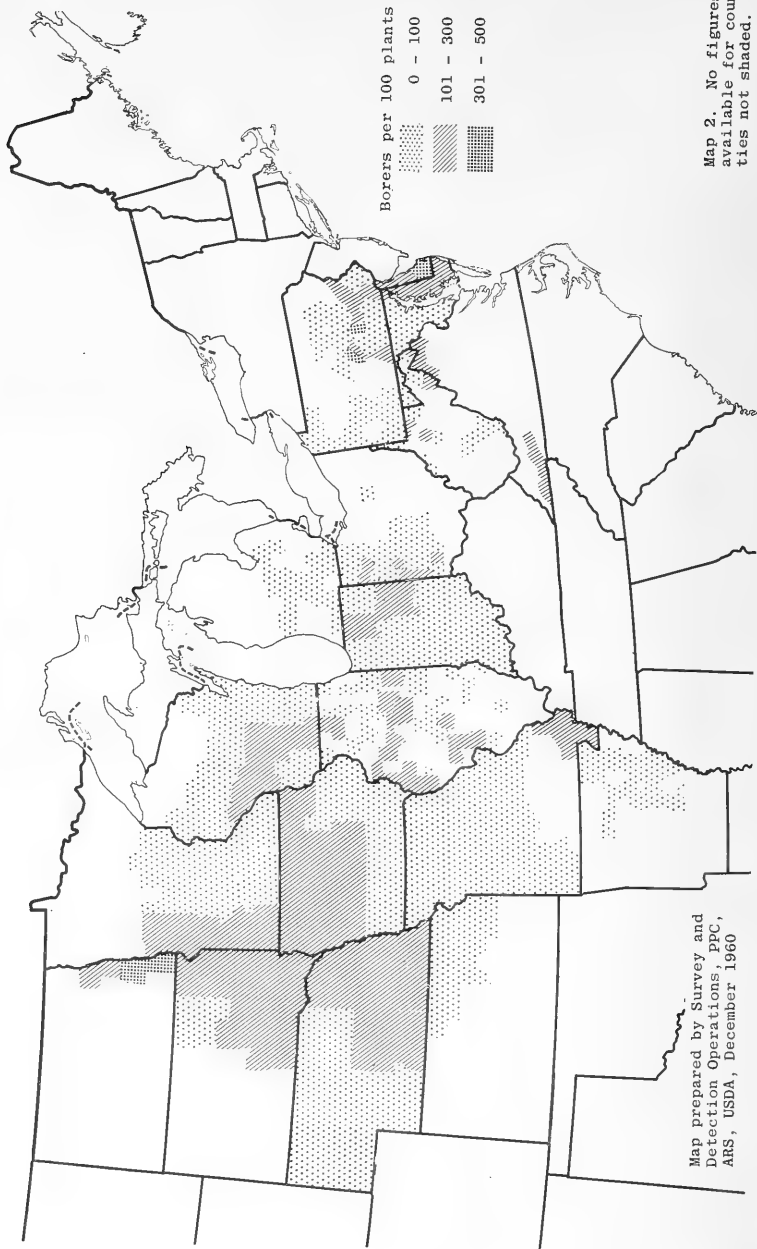
## FALL 1960



Map 1. Districts surveyed. Average number of borers per 100 stalks based on 1960 surveys. (Comparable figures in Table 2).

Map prepared by Survey and Detection Operations, PPC, ARS, USDA, December 1960.

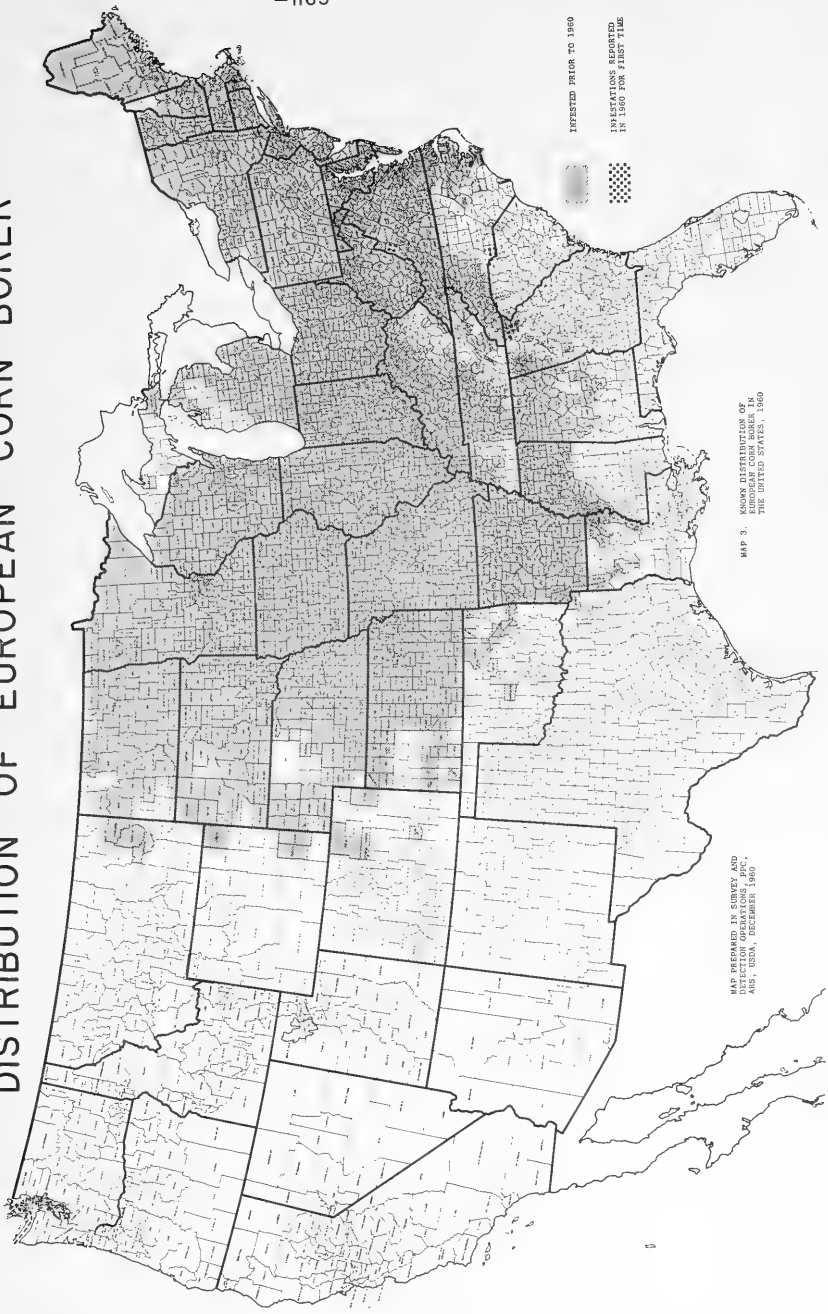
# EUROPEAN CORN BORER ABUNDANCE FALL 1960



Map prepared by Survey and  
Detection Operations, PPC,  
ARS, USDA, December 1960.

Map 2. No figures  
available for coun-  
ties not shaded.

# DISTRIBUTION OF EUROPEAN CORN BORER



INFESTED PRIOR TO 1960  
INFESTATIONS REPORTED  
IN 1960 FOR FIRST TIME

MAP 3. KNOWN DISTRIBUTION OF  
EUROPEAN CORN BORER IN  
THE UNITED STATES, 1960

MAP PREPARED BY SURVEY AND  
MAPPING DIVISION, ARS,  
USDA, USDA, DECEMBER 1960







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WASHINGTON 25, D. C.

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**ECONOMIC INSECT  
REPORT**

*Issued by*

**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL DIVISION

### SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## INTRODUCTION

Several changes and additions have been made in the 1960 index. In both the "Common Names" and "Scientific Names" page numbers underlined represent references to the "Summary of Insect Conditions in the United States - 1959" (including the special Forest Insect Summary issued by the Forest Service). The small ° that follows the common name of certain species in the "Common Names" indicates that the name was not approved by the Entomological Society of America prior to December 1960. However, many of these are foreign species and the common names used in the Cooperative Economic Insect Report were taken from literature from a country or countries where the species occurs. Most other common names marked in the same manner have been approved for usage by the Entomological Society of America after December 1960, but were used in the report prior to that time. It will also be noted that there is a complete cross indexing of page references of species with common names. In some cases, however, either the common or scientific name of the insect or pest may not appear on the page referenced, but one or the other will be present. Footnotes in the "Common Names" and "Scientific Names" are indicated by an asterisk.

# COOPERATIVE ECONOMIC INSECT REPORT

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 Japanese beetle (*Popillia japonica*) 109, 204, 275, 276, 444, 473, 497, 511, 534, 536, 555, 370, 571, 572, 604, 605, 618, 622, 631, 644, 662, 664, 677, 680, 683, 688, 691, 694, 704, 707, 716, 719, 745, 747, 761, 765, 773, 774, 792, 815, 838, 925, 928, 965, 976, 992, 1052, 1076, 1135  
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\*Changed from Lasius interjectus during 1960.

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 \* Carried in Vol. 10 as *Thaumetopoea pityocampa*.
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\*Correction on page 319 refers to this species.

\*\*Carried in CEIR, Vol. 10, as C. 7-punctata.

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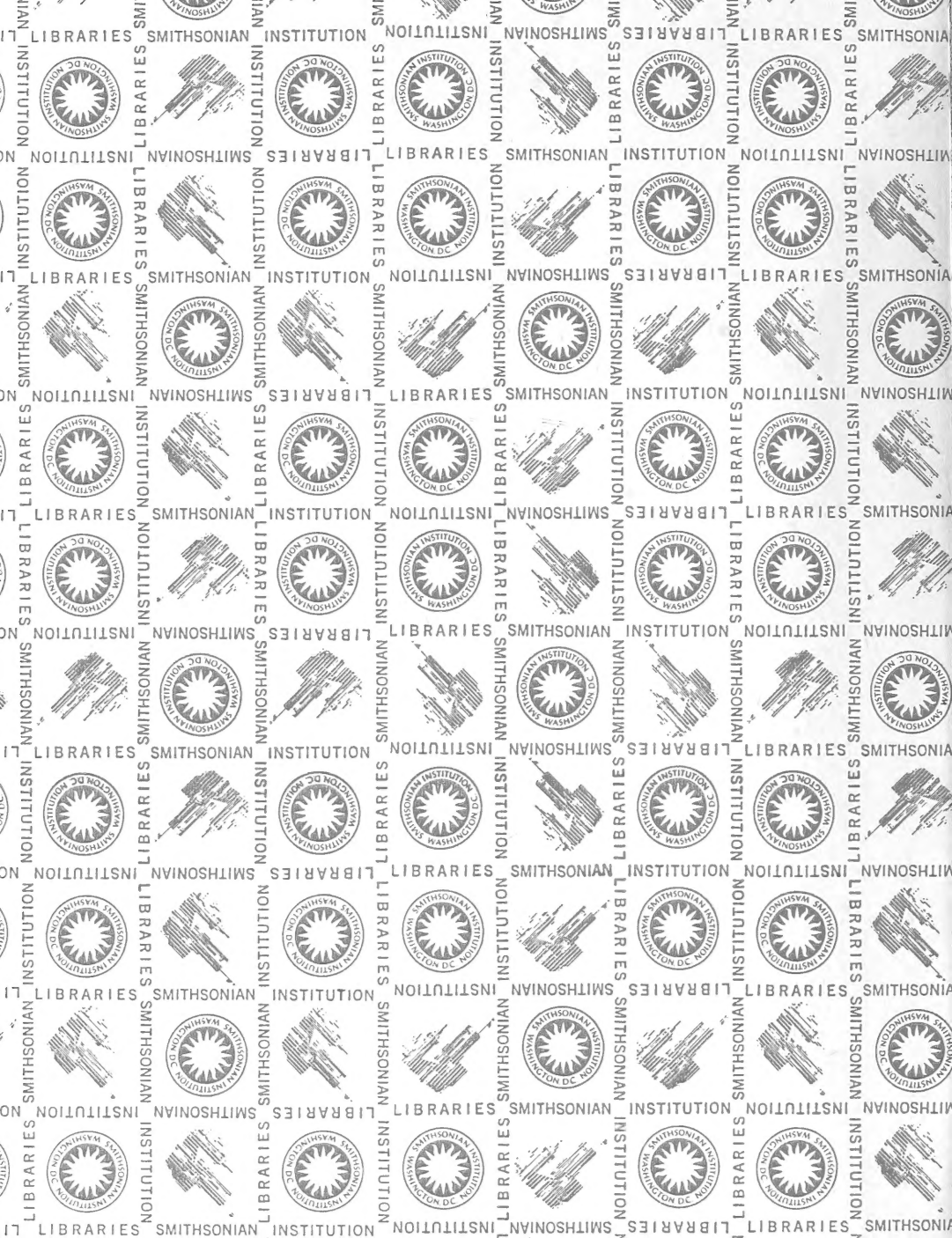
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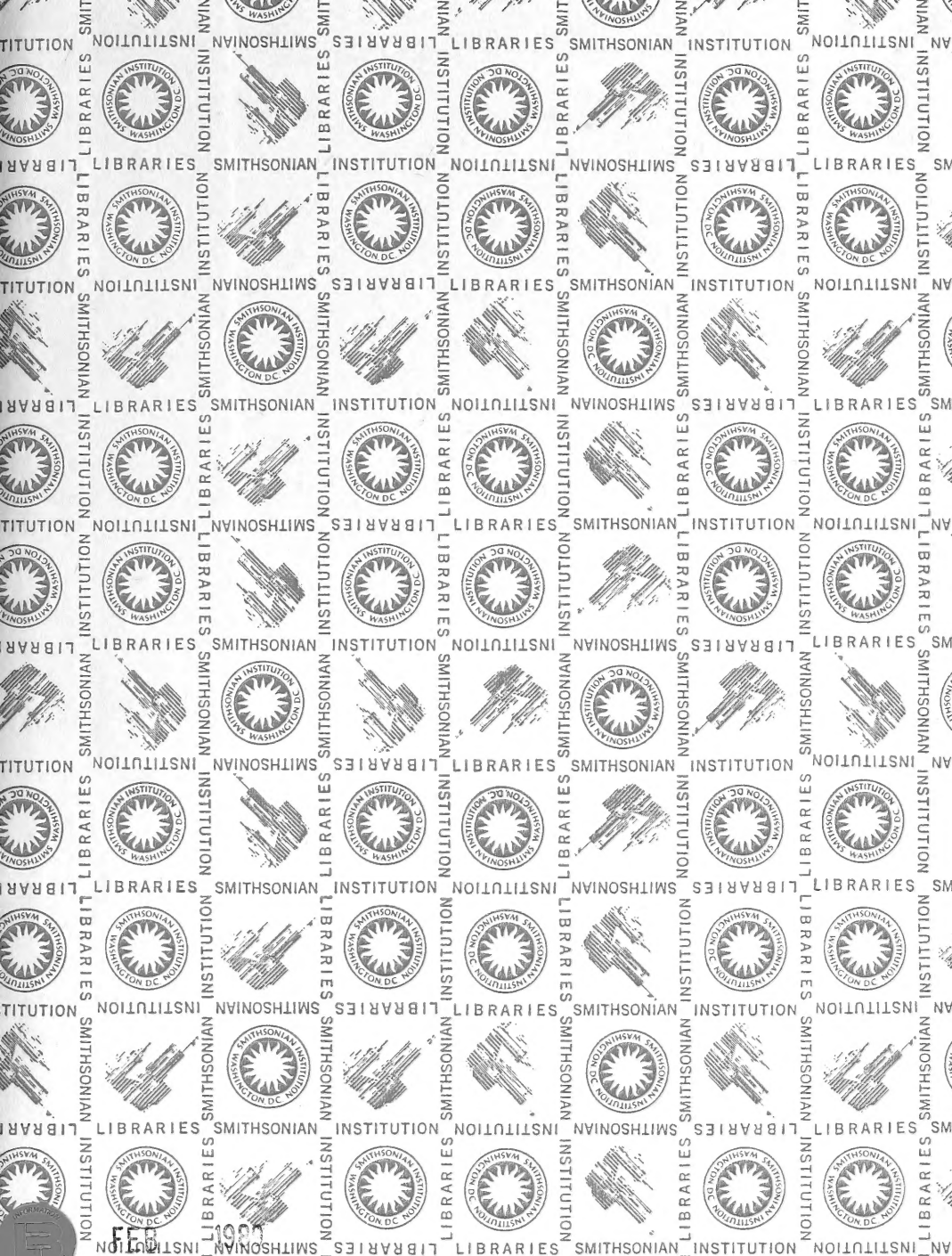
                      
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