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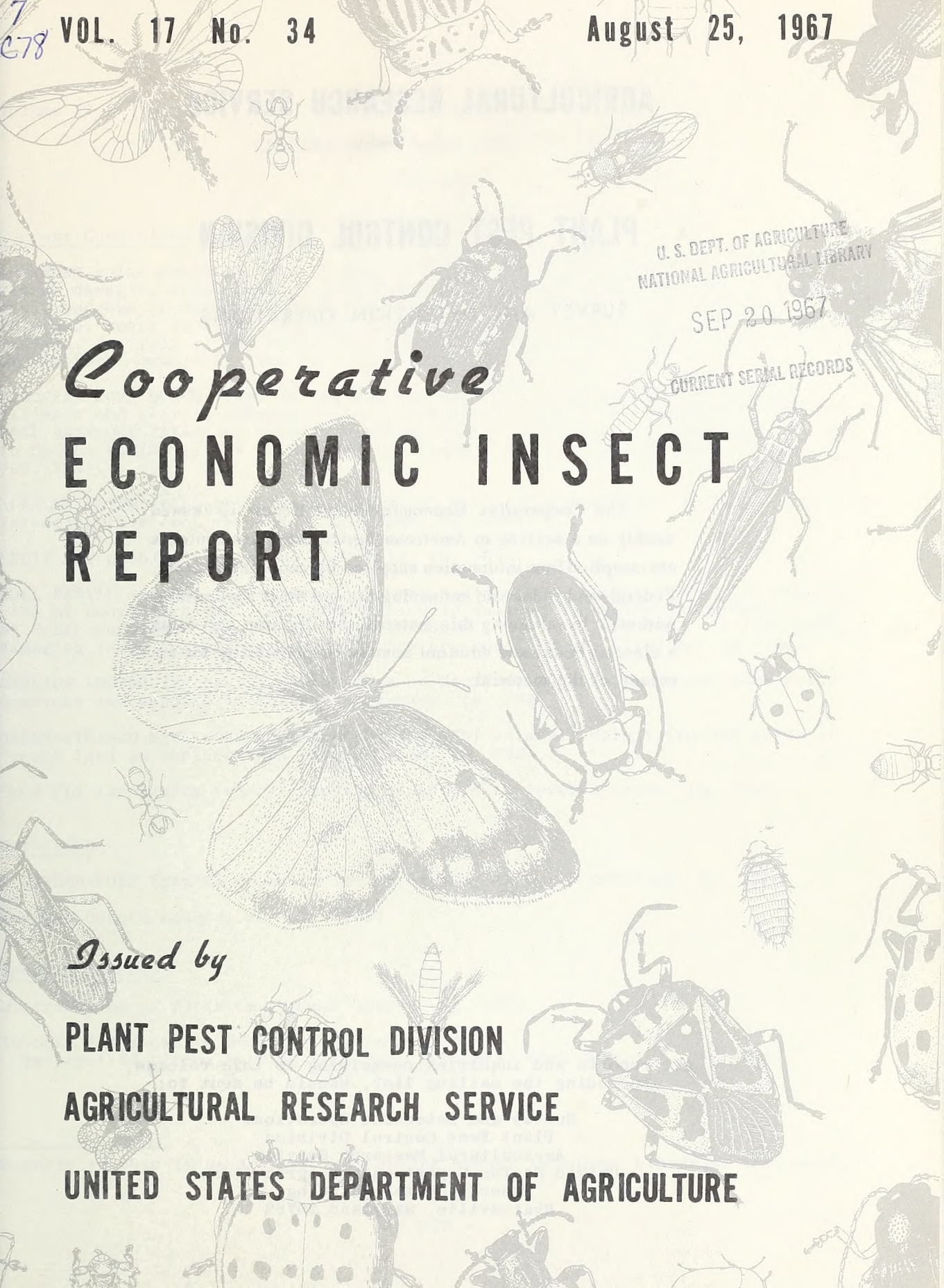
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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

*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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Hyattsville, Maryland 20782

## COOPERATIVE ECONOMIC INSECT REPORT

## HIGHLIGHTS

Current Conditions

ARMYWORM moths heavy in eastern Massachusetts, numerous on Virginia Eastern Shore; larvae damaging sweet corn in Hudson Valley of New York, grasses in South Carolina, grain sorghum in Texas. CORN EARWORM infesting all corn in Arkansas Valley in Colorado, heavy in areas of Kansas; damage expected to be heavier than in 1966 in Indiana. (p. 781). CORN LEAF APHID major problem on sweet corn in Hudson Valley of New York; damage heavier in Indiana than in 1966. (p. 782).

EUROPEAN CORN BORER moths increasing rapidly in Michigan, heavy in western Illinois and central Indiana; stalk infestations increasing throughout Maryland. FALL ARMYWORM infesting corn in Arkansas Valley of Colorado, damaging sweet corn in Hudson Valley of New York; heavy on grasses in Alabama and Arkansas. (pp. 782, 783, 784).

ALFALFA CATERPILLAR moth flights heavy on alfalfa in southwest New Mexico, larvae infesting this crop throughout Colorado. (p. 786).

FRUIT FLY population studies in Hawaii. (p. 797).

BOLL WEEVIL serious in western Tennessee and northern Alabama; heavy in Florence area of South Carolina. BOLLWORMS heavy in western Tennessee and Florence area of South Carolina; egg laying heavy in Louisiana. (pp. 787, 788). A LEAF MINER damaging large acreage of cotton in Sumter County, South Carolina. (p. 789).

CABBAGE LOOPER increasing on tomatoes on Maryland Eastern Shore and commercial tomatoes and peppers in southern Delaware. (p. 789).

GREEN-STRIPED MAPLEWORM and SADDLED PROMINENT severely defoliated 500 acres of forest land in northeastern Pennsylvania. (p. 792).

FACE FLY increasing and/or annoying livestock in several areas. (p. 794).

Detection

A POWDER-POST TERMITE reported for first time in North Carolina. (p. 795).

For new county records see page 789.

Special Reports

Distribution of Birch Leaf Miner (map). (p. 800).

Insects Not Known to Occur in the United States

Two-spotted Citrus Psyllid (Spanioza erythraea (Del Guercio)). (p. 801).

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-AUGUST TO MID-SEPTEMBER

The Weather Bureau's 30-Day Outlook for mid-August to mid-September calls for temperatures to average below seasonal normals from the Continental Divide eastward to the Appalachians as well as in portions of the southern Rockies and in the gulf coast region. Above normal temperatures are indicated over the Far West and also in the middle and north Atlantic Coast States. In areas not specified near normal temperatures are anticipated. Precipitation is expected to exceed normal over the eastern third of the Nation and also the west gulf coast region. Subnormal amounts are indicated in the Pacific Coast States as well as over the northern Plains and the northern Mississippi Valley. In other areas, near normal amounts of rainfall 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 the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

For Weather of the Week, see page 793.

## SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

**ARMYWORM (*Pseudaletia unipuncta*)** - MASSACHUSETTS - Moth flights heavy at East Wareham, Plymouth County; 317 trapped week ending August 11. (Tomlinson). NEW YORK - Damaging whorl-stage sweet corn in Hudson Valley; 1 percent in untreated plants. (N.Y. Wkly. Rpt., Aug. 14). VIRGINIA - Numerous in Painter area light trap on Eastern Shore during past 2 periods. (Hofmaster). SOUTH CAROLINA - Infested about 2,000 acres on farm in lower Hampton County. Excellent results secured on foliage crops with a carbamate. Reported in Greenwood, Fairfield, Kershaw, Saluda, McCormick, and Newberry Counties. (Lloyd, Aug. 15). Serious on pasture grass in Jasper County. Severely infested sorghum about to head in Greenwood County. Most leaves stripped from some plants. A carbamate gave some control. Repeat applications of increased amounts will be needed. (Nettles et al., Aug. 15). GEORGIA - Numerous infestations reported. (Nolan et al.). Heavy in Coastal Bermuda grass and millet in Turner, Schley, and Houston Counties. (French). Diseased and parasitized larvae throughout area. (Coleman). WISCONSIN - Larvae in pretasseled sweet corn in southern Columbia County. (Wis. Ins. Sur.). TEXAS - Moderate in whorls of grain sorghum, producers concerned near Sunray, Moore County. (Van Zandt). CALIFORNIA - Larvae heavy on lawns in Redding, Shasta County, and in Ventura, Ventura County. (Cal. Coop. Rpt.).

**ASTER LEAFHOPPER (*Macrosteles fascifrons*)** - COLORADO - Present in all lettuce fields checked in Otero and Pueblo Counties; average 7 per 20 square feet. (Schweissing). WISCONSIN - Decreasing in carrot, mint, celery, and lettuce fields in Endeavor, Montello, and Berlin areas; damage ranged 12-15 percent on lettuce in most areas, up to 80 percent in 1 field. (Wis. Ins. Sur.).

**CORN EARWORM (*Heliothis zea*)** - NEW MEXICO - Damage ranged 30-50 percent in Luna and Hidalgo County silage corn. (Elson). COLORADO - Infesting all corn checked in Arkansas Valley; percent ear infestation ranged less than 1 to 40 (average 5). Damage limited to ear tips, controls not effective. (Schweissing). OKLAHOMA - Moderate on Marshall County sorghum and Ottawa County corn; light on Mayes County sorghum and Bryan County peanuts. (Okla. Coop. Sur.). KANSAS - Infestation ranged 80-90 percent in Franklin, Anderson, Bourbon, Bourbon, Allen, Crawford, and Neosho Counties; first and second instars dominant. (Simpson). NEBRASKA - Averaged 2 per 100 corn plants near Ceresco, Saunders County. (Keith, Tollefson, Aug. 17). ARKANSAS - Heavy on soybeans in Desha County area August 14-15. About 10 days earlier than usual; correlates with peak moth flights 10 days earlier this year than past several years. Larvae ranged 5-75 (average 34) to 30 row feet in 9 fields with small pods; ranged 0-58 (average 18) to 30 row feet in 19 fields in bloom stage. Pod feeding very light, no surveyed fields treated. Some fields showed small areas of drought stress. Counts higher in these areas probably due to lower predator numbers. None in 5 Hempstead County fields or in Crawford County field. (Boyer). Infestations in Hempstead County continue to develop as late-planted grain sorghum reaches bloom stage. Noneconomic in all surveyed fields. Ranged 4-55 (average 29.8) per 10 row feet in field plots on Southwest Branch Experiment Station. (Ark. Ins. Sur.). ALABAMA - Light to medium in several Baldwin County fields. (Turner). GEORGIA - Light to very heavy; 2 of 18 soybean fields need controls in southern area. Light to very heavy across peanut belt. (French). Total of 23,016 moths taken in 11 blacklight traps August 2-9 at Tifton. (Copeland). WISCONSIN - Few moths taken in light traps, no larvae in area. (Wis. Ins. Sur.). INDIANA - Few adults taken in southern and central area blacklight traps. Damage expected to be heavier in 1967 than in 1966; approximately 75 percent of corn in State not yet in dough stage. (Huber). NEW YORK - Very numerous in Suffolk County; 4 moths trapped week ending August 14 in Hudson Valley. Larvae on sweet corn August 8 at Monsey, Rockland County. (N.Y. Wkly. Rpt.). RHODE ISLAND - Numerous in corn in Esmond and Kingston. (King, Kerr). MASSACHUSETTS - Three moths taken in cranberry bog blacklight trap at East Wareham, Plymouth County. (Tomlinson, Aug. 11). NEW HAMPSHIRE - Larvae in 3-5 percent of corn ears in Litchfield, Hillsboro County. (Sutherland, Aug. 8). TEXAS - Damaging foliage in several fields near Giddings, Lee County. (Spivey).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Light to medium on grain sorghum in Luna and Hidalgo Counties. (Elson, Campbell). COLORADO - Increasing on corn in Weld County; heavy east of Lucerne. (Boyes). Noneconomic in all grain sorghum checked in Arkansas Valley area. (Schweissing). ARKANSAS - Present in many grain sorghum fields in southwest area during summer; in heads of late-maturing sorghum. Heavier in tight heads than in open heads. Very heavy on base of heads not clear of sheath. (Boyer). IOWA - Ranged 20-250+ per corn plant in west-central, 0-300+ in central areas. (Iowa Ins. Sur.). WISCONSIN - Decreasing in older corn; winged forms abundant on tobacco, carrots, and mint. Total of 2,500 acres of corn treated in Waukesha County. Infestations of 100 percent, with colonies of 100+, on sweet corn in Dane County. (Wis. Ins. Sur.). INDIANA - Damage heavier than in 1966. (Huber). NEW YORK - Numerous in Suffolk County; major problem on sweet corn in Hudson Valley where controls poorly timed. (N.Y. Wkly. Rpt., Aug. 14). NEW HAMPSHIRE - Moderate to heavy on corn tassels and silks in southern area. (Sutherland, Aug. 10).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Adults averaged 2 per sweep in west-central area, up to 20 per sweep in few southwest area fields. Ranged up to 50 (average 3) per sweep in central counties. Light on lima and snap beans, potatoes, and peppers in Columbia, Waushara, Portage, Waupaca, and Wood Counties; average 5 per lima bean plant in Columbia County. (Wis. Ins. Sur.). INDIANA - Moderate to heavy in northern half of State, ranged 8-27 per sweep with much yellowing and stunting of alfalfa. Heavy on alfalfa in Kankakee River area and in north-central and northwestern lake area; ranged 23-78 per sweep. (Huber). OHIO - Decreasing on alfalfa throughout State. Peak damage occurred from mid-June through early August. Averaged about 4 per sweep in Union, Champaign, Putnam, Richland, and Ashland Counties. Noneconomic in Wayne County; up to 2 per sweep in 1 field with 2 per 25 sweeps in other fields. (Flessel).

SPOTTED ALFALFA APHID (Therioaphis maculata) - INDIANA - Increasing on alfalfa in dry portions of north-central and northeastern areas; ranged 8-32 per sweep. Averaged 250 per sweep on third-growth alfalfa east of Goshen, Elkhart County. (Huber). WISCONSIN - Ranged 6-100 per sweep in alfalfa in central counties; parasitism 50+ percent in many fields. (Wis. Ins. Sur.). KANSAS - Counts per 10 sweeps in alfalfa by county: Barton 5-30, Rush 0-5, Rice 5-30, Pawnee 0-10. (Martinez). MISSOURI - Averaged 25 per sweep on alfalfa in Cole County. (Peters). COLORADO - Decreasing in alfalfa; ranged 0-300 per 100 sweeps in Arkansas Valley. (Schweissing).

TOBACCO HORNWORM (Manduca sexta) - OKLAHOMA - Averaged 1 per 10 plants in tomatoes in Payne County. Braconid parasites active. (Okla. Coop. Sur.).

TOMATO HORNWORM (Manduca quinquemaculata) - RHODE ISLAND - Heavy in gardens in Providence, Warwick, and North Kingstown. (Hartley). COLORADO - Adults taken in light traps in several areas. (Schweissing).

## CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - All stages present on sweet corn in Hudson Valley, moths decreasing in blacklight traps. (N.Y. Wkly. Rpt., Aug. 14). MARYLAND - Stalk infestations increasing in all sections. Moths averaged 66 per night in blacklight trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). OHIO - First-generation adult flight in Wayne County August 15, light oviposition. (Barry). MICHIGAN - Blacklight collections August 2-8 in Lenawee County indicate rapid buildup; population nearing peak. High counts expected to continue about 10 days; some moths expected until frost. (Janes, Newman). INDIANA - Moths heaviest in north-central and central district blacklight traps. (Huber). ILLINOIS - Moth flights heavy in western and northwestern sections. Egg laying progressing. (Ill. Ins. Rpt.). WISCONSIN - Eggs on 4 percent of sweet corn plants in southern counties, none on peppers in Hancock area. Third instars through pupae present on corn in many areas; ratio of larvae to pupae about 1:1. (Wis. Ins. Sur.). NORTH DAKOTA - First-brood larvae in most corn in Emmons, La Moure, McIntosh, Sargent, Dickey, Richland, and Ransom Counties; pupation less



than 1 percent. Percent plants infested by county: Emmons 6, La Moure 18, McIntosh 13, Sargent 40, Richland 31, Dickey 47, and Ransom 25. Borers per 100 plants by county: Emmons 6, La Moure 81, McIntosh 34, Sargent 153, Richland 131, Dickey 195, and Ransom 101. (Brandvik). KANSAS - Larval infestation ranged up to 50 percent of late corn in Doniphan County. Early fields in Brown and Doniphan Counties averaged 3 first and second instars per 25 plants. (Brooks).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ALABAMA - Second-generation larval feeding evident in Marion County corn. (Price).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Activity and damage moderate in milo near Floresville, Wilson County. (Texas Coop. Rpt.). ARIZONA - Infesting some grain sorghum in Maricopa County. (Ariz. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - RHODE ISLAND - Infesting sweet corn in Little Compton and Westerly. (Chaves, Mathewson). NEW YORK - Damaging 10 percent of untreated whorl-stage sweet corn in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 14). MARYLAND - Whorl infestations of 2-35 percent common on late-planted field corn in all sections. (U. Md., Ent. Dept.). VIRGINIA - Larvae in whorls of late corn throughout State. Damaging corn in Carolina, Rockingham, Louisa, and Gloucester Counties. (Isakson et al.). WISCONSIN - Larvae in pretassel sweet corn in southern Columbia County. (Wis. Ins. Sur.). IOWA - Larvae damaging corn in Marion and Fremont Counties. (Iowa Ins. Sur.). MISSOURI - Larval infestation averaged 90 percent in Franklin County corn field; damage by fifth instars moderate to late corn in Montgomery County. (Munson). OKLAHOMA - Light to moderate on grain sorghum heads in Garfield and Kay Counties. (Okla. Coop. Sur.). COLORADO - Infesting all corn checked in Arkansas Valley area; percent ear infestation varied from less than 1 to 40 (average 5). Damage limited to ear tips; controls not effective. (Schweissing).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Heavy on 60,000 acres of corn near Grande Island, Hall County. Fresh egg masses present August 14; controls applied. (Roselle).

CORN ROOTWORMS (Diabrotica spp.) - ARIZONA - Diabrotica sp. larvae and adults damaging corn in poorly treated Yavapai County fields. (Ariz. Coop. Sur.). IOWA - Adults ranged 5-17 per corn plant in west-central area. (Iowa Ins. Sur.). WISCONSIN - D. virgifera more numerous than D. undecimpunctata howardi in Price, Buffalo, Polk, and Pepin Counties. (Wis. Ins. Sur.). OHIO - D. undecimpunctata howardi adults less common than D. longicornis in southern area; averaged 1.5 per plant in 1 corn field. In 5 of 32 fields, D. longicornis exceeded 1.5 per plant, averaged 7.5 in 2 fields. (Rose). MARYLAND - D. undecimpunctata howardi adults averaged 40 per 100 corn plants near Thurmont, Frederick County. (U. Md., Ent. Dept.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Larvae averaged 5 per corn plant in Price, Buffalo, Polk, and Pepin Counties; few adults in 100 percent lodged fields. (Wis. Ins. Sur.). ILLINOIS - Adults heavier in northeast than northwest counties, averaged 10-20 per plant in some fields. Larvae and pupae present in some fields; adult emergence will continue for 10 days in northern counties. (Ill. Ins. Rpt.). DELAWARE - Adults light in blacklight mosquito traps in New Castle County. (MacCreary).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Adults found for first time in Carroll and Bureau Counties for new county records. (Ill. Ins. Rpt.). COLORADO - Adults on corn in Milliken and Johnstown area, Weld County; some lodging. (Boyes).

FLEA BEETLES (Chaetocnema spp.) - ARIZONA - Ranged 12-16 per seedling corn plant in Yuma County, controls applied. (Ariz. Coop. Sur.). NEW YORK - C. pulicaria averaged 2 per corn plant in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 14).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Light in 6 Hinds County sorghum fields. (Dinkins). ARKANSAS - Light on grain sorghum; late-maturing fields should be watched. (Ark. Ins. Sur.).

SPIDER MITES - NEVADA - Increasing on corn in Pershing County; damage moderate to heavy on tops of plants. (Nev. Coop. Rpt.). COLORADO - Tetranychus urticae present on lower leaves of corn in Pueblo, Otero, Crowley, Bent, and Prowers Counties. Population increase moderate in some instances; moving into middle leaves. Damage primarily threat to corn for forage or ensilage. (Schweissing). Heavy in Weld County fields where controls not applied. (Boyes).

#### SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Infesting rice in northeast area. (Barnes).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Light; tunneling in rice stalks in fields near El Campo, Wharton County. Rice in soft dough stage. (Smith).

#### TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Heavy outbreaks of full-grown larvae seriously damaged Coastal Bermuda grass and other grasses in Randolph, Colbert, Bibb, Cullman, Jackson, Coosa, Pike, Lee, Fayette, and Sumter Counties. (Odom et al.). ARKANSAS - Heavy in many areas, primarily northeastern sections. Heavy on lawns in Jefferson and Pulaski Counties and eastward and northward across State. (Barnes, Boyer).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Larvae heavy, completely destroyed large hybrid Sudan grass field of 6 to 8-inch high plants near Post, Garza County; moderate to heavy in eastern and central parts of county. (Texas Coop. Rpt.).

A CHINCH BUG (Blissus insularis) - TEXAS - Moderate, widespread, and increasing on St. Augustine grass lawns in Brazos, Trinity, and Hamilton Counties. (McCutchen).

A BILLBUG (Sphenophorus venatus vestitus) - KANSAS - Averaged 3 per square foot in 2 fields of zoysia grass in Sedgwick County. (Redding).

BERMUDAGRASS MITE (Aceria neocynodonis) - OKLAHOMA - Moderate on Pittsburg County lawns. (Okla. Coop. Sur.).

#### FORAGE LEGUMES

PEA APHID (Acyrtosiphon pisum) - MICHIGAN - Adults and nymphs averaged 90 per 10 sweeps August 14 in Kent County alfalfa. Low, but field populations building up for first time during season. (Dowdy). WISCONSIN - Some increase on alfalfa throughout State; ranged 6-50 per sweep in southwest and western counties; averaged 40-60 per sweep in central area. (Wis. Ins. Sur.). IOWA - Very light, less than 5 per 10 sweeps, in west-central area. (Iowa Ins. Sur.). KANSAS - Very light, up to 5 per 10 sweeps, on alfalfa in Franklin, Miami, Linn, Anderson, Bourbon, Allen, Crawford, and Neosho Counties. (Simpson). OKLAHOMA - Heavy, damaged Mayes County alfalfa. (Okla. Coop. Sur.). COLORADO - Light in recently cut Arkansas Valley alfalfa; ranged up to 5,000 per 100 sweeps of advanced-growth alfalfa in Prowers County. (Schweissing). UTAH - Light in alfalfa, 1-8 per 10 sweeps, at Brigham City and Honeyville area, Box Elder County. (Knowlton). NEVADA - Ranged 2-8 per sweep in alfalfa hay fields near Fernley, Lyon County. (Cooney).

LYGUS BUGS (Lygus spp.) - NEVADA - Ranged 4-10 per sweep in Fernley, Lyon County, alfalfa hay fields. (Cooney). ARIZONA - Ranged 60-140 per 100 sweeps on Yuma County alfalfa; counts lower than previous week. (Ariz. Coop. Sur.). UTAH - L. elisus and Lygus spp. adults and nymphs 8-15 per 10 sweeps in alfalfa at Brigham City and Honeyville area, Box Elder County. L. elisus, L. hesperus, and Lygus spp. 3-18 per 10 sweeps in Logan and Avon area, Cache County. (Knowlton). COLORADO - Up to 40 per 100 sweeps on Arkansas Valley alfalfa. (Schweissing). KANSAS - Averaged 1-4 per 10 sweeps on Barton County alfalfa and 0-2 per 10 sweeps in Rice County. (Martinez).

TARNISHED PLANT BUG (Lygus lineolaris) - IOWA - Ranged 6-24 per 10 sweeps in alfalfa and alfalfa-red clover mixture in west-central area. (Iowa Ins. Sur.). MARYLAND - Ranged 1-4 per sweep in 2 red clover fields in Queen Annes County. (U. Md., Ent. Dept.).

PLANT BUGS (Adelphocoris spp.) - IOWA - A. lineolatus ranged 6-20 per 10 sweeps on alfalfa and alfalfa-red clover mixture in west-central area. (Iowa Ins. Sur.). UTAH - A. superbus light on alfalfa in Brigham City and Honeyville area, Box Elder County. (Knowlton).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Ranged 60-400 per 100 sweeps on Yuma County alfalfa; heavier in few fields indicating increase. Light to moderate in Pinal County alfalfa. (Ariz. Coop. Sur.). ARKANSAS - Declined in Hempstead County. In untreated check plots August 14, adults averaged 30 in 100 sweeps, nymphs 4 on 15 row feet, and 42 percent girdling; figures comparable with 49.5, 9.5, and 42 percent, respectively, August 7. (Ark. Ins. Sur.).

ALFALFA WEEVIL (Hypera postica) - NEVADA - Adults and larvae averaged 1 per sweep in alfalfa hay fields near Fernley, Lyon County. (Cooney). COLORADO - Adults and larvae light in Pueblo, Crowley, and Otero Counties. (Schweissing). ARKANSAS - Larvae in Mississippi County; previously not observed at this time, probably due to below normal temperatures. (Ark. Ins. Sur.). MICHIGAN - No adults or larvae August 11 in 250 sweep samples from 4 alfalfa fields in southern Oakland County. Some adults sampled earlier in Oakland County, but numbers still very low. (Behnke). MARYLAND - Adults averaged 5 and larvae 4.5 per 10 sweeps on alfalfa near Salisbury, Wicomico County. (U. Md., Ent. Dept.).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NEBRASKA - Averaged 2.5 per 50 sweeps in Lancaster County; ranged 16-20 per 50 sweeps in Saunders County. (Beland).

CUCUMBER BEETLES (Diabrotica spp.) - IOWA - Very common on west-central area alfalfa; D. virgifera ranged 4-7 and D. undecimpunctata howardi 3-5 adults per 10 sweeps. (Iowa Ins. Sur.).

PALE-STRIPED FLEA BEETLE (Systema blanda) - MARYLAND - Adults heavy, averaged 10 per sweep, in new stand of alfalfa near Thurmont, Frederick County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - KANSAS - Ranged 3-7 per 10 sweeps on alfalfa in Linn, Bourbon, Allen, and Crawford Counties. (Simpson). IOWA - Larvae ranged 1-5 per 10 sweeps on alfalfa and alfalfa-clover mixtures in west-central area. (Iowa Ins. Sur.). MICHIGAN - Some increase in adult numbers noted. Larvae low in fields. (Newman, Janes). INDIANA - Larvae averaged 2 per sweep on west-central area alfalfa; ranged 1-4 per 10 sweeps in other areas. (Huber, Smith). MARYLAND - Ranged 1-3 per sweep on alfalfa in Frederick and Montgomery Counties. (U. Md., Ent. Dept.).

YELLOW-STRIPED ARMYWORMS (Prodenia spp.) - MISSOURI - P. ornithogalli larvae averaged 30 per 10 sweeps on Osage County alfalfa. (Munson). NEVADA - P. praefica increasing on alfalfa; localized fields required treatments in Washoe, Pershing, and Lyon Counties. (Nev. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Adult flights heavy on alfalfa in Luna and Hidalgo Counties. Larvae light in most fields. (Campbell). COLORADO - Larvae on alfalfa throughout State; up to 200 per 100 sweeps in Arkansas Valley, adults numerous. (Schweissing). UTAH - Light, less than 1 per 10 sweeps, on Brigham City and Honeyville area alfalfa in Box Elder County. (Knowlton)

WEBWORMS (Loxostege spp.) - OKLAHOMA - Heavy on Mayes County alfalfa. (Okla. Coop. Sur.). MISSOURI - L. similalis larvae averaged 20 per 10 sweeps on Osage County alfalfa. (Munson).

#### SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - KANSAS - Heavy leaf feeding on early beans in Nemaha and Brown Counties, light damage on late beans. (Brooks). NEBRASKA - Averaged 12 per 25 sweeps in Saunders County field. (Keith, Tollefson, Aug. 17). IOWA - Averaged 3 per 10 sweeps in west-central area. (Iowa Ins. Sur.). VIRGINIA - Light, less than 1 per 10 feet of row, in Henrico, Hanover, and Powhatan Counties. (Isakson).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Larvae and adults moderate, damaging in Gloucester County. (Birdsall). Light in Henrico and Hanover Counties. (Isakson). GEORGIA - Light to moderate in southern area. (French). MISSISSIPPI - Light and noneconomic on 15 acres in Oktibbeha County and 70 acres in Tunica County. (Dinkins).

CUCUMBER BEETLES (Diabrotica spp.) - IOWA - D. virgifera and D. undecimpunctata howardi taken in west-central area; D. virgifera most common. (Iowa Ins. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - NEBRASKA - Averaged 16 per 25 sweeps in Saunders County field. (Keith, Tollefson, Aug. 17). KANSAS - Ranged 7-18 per 10 sweeps on mature beans in Linn, Bourbon, and Crawford Counties. Leaf damage heavy. (Simpson). IOWA - Larvae ranged 0-7 per 10 sweeps in west-central area. (Iowa Ins. Sur.). MISSOURI - Larvae 10 per foot in southeastern area. (Jones). ILLINOIS - Light; averaged 8-10 per 25 sweeps in central section, 5 in northern sections. (Ill. Ins. Rpt.). VIRGINIA - Ranged 1-3 larvae per 10 feet of row in Henrico, Powhatan, and Hanover Counties. (Isakson). GEORGIA - Light to moderate on southern area. (French).

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Treatment required in heavily infested Chickasaw County field. Light and spotty in several Yazoo County fields, decreasing in other areas of State. (Dinkins). ARKANSAS - Occasional larva in Desha County, none in Hempstead or Crawford Counties. Up to 20 per row foot in Lonoke County. (Boyer). Present in east-central and northeastern areas. (Ark. Ins. Sur.).

BEET ARMYWORM (Spodoptera exigua) - TEXAS - Heavy, about 20 percent defoliation, in 250-acre field in Brazos bottom, Brazos County; controls needed. (Texas Coop. Rpt.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - KANSAS - Averaged 0-2 per 10 sweeps in Bourbon and Crawford Counties. (Simpson).

CABBAGE LOOPER (Trichoplusia ni) - MISSISSIPPI - Light to moderate in most fields throughout State; leaf damage not severe enough to warrant treatment. Some larvae diseased. (Dinkins).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Damage heavy and spotted in fields near Jasper, Jasper County; larvae 3-4 per plant in field with stems girdled and plants killed. (Texas Coop. Rpt.). ARIZONA - Heavy in July-planted fields in Yuma Valley, Yuma County. (Ariz. Coop. Sur.).

COTTON SQUARE BORER (Strymon melinus) - ARKANSAS - Light in most Desha County fields, first time observed on soybeans in State. (Boyer).

ALFALFA CATERPILLAR (Colias eurytheme) - ARKANSAS - Light in most fields surveyed in Desha County. Unusual in soybeans. (Boyer).

GREEN STINK BUG (Acrosternum hilare) - MISSISSIPPI - Averaged 6 per 200-foot sample taken with vacuum sweeper in Oktibbeha, Yazoo, and Tunica Counties. (Dinkins). ALABAMA - Spotty in several Baldwin County fields. (Turner).

SPIDER MITES (Tetranychus spp.) - MARYLAND - Heavy border-row damage in several Wicomico and Worcester County fields. (U. Md., Ent. Dept.).

## PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Moderate activity and damage in fields near Giddings, Lee County. (Texas Coop. Rpt.).

FALL ARMYWORM (Spodoptera frugiperda) - GEORGIA - This species and Feltia subterranea light across peanut belt. (French).

## COTTON

BOLL WEEVIL (Anthonomus grandis) - MISSOURI - Adults light in 27 of 332 fields. (Jones). OKLAHOMA - Infestations ranged 10-90 percent in Kiowa County; light in Marshall County. (Okla. Coop. Sur.). TEXAS - Remains light and scattered in High Plains control zone. Punctured squares averaged less than 5 percent in most instances; only small percent of sprayed fields infested. Nearing economic levels in some Kent County fields. Heavy in fields outside control zone in Stone-wall County; punctured squares near 90 percent in some fields. (Rummel, Aug. 15). LOUISIANA - Continued heavy in most cotton. Regular 4 to 5-day spray schedule necessary to keep punctured squares low. Populations should continue high, remainder of season. (Tynes, Aug. 14). Percent infestation averaged 13.6 in Madison Parish compared with 12.6 previous period. Weevil infestation in squares ranged 1-8 percent (average 1.9) in 80 of 181 fields. (Cleveland et al., Aug. 17). MISSISSIPPI - Punctured squares in 24 of 30 fields in delta counties. Percent punctures averaged 18.1 (range 0-96.4). Infestations above 10 percent in 9 fields. (Pfrimmer et al.). Controls successful and general infestation level decreased. Infestation levels in hill counties remained high. Average percent infestation by county: Issaquena 8-10 in 30 fields; Adams 4 in 3; Lowndes 15 in 10; Quitman 20 in 15; Sharkey 8 in 16; Madison 5 in 15; Hinds 4 in 5; Holmes 20 in 23; Chickasaw 23 in 6; and Yazoo 6 percent in 16 fields. (Dinkins). ALABAMA - Damage approaching serious proportions in all northern counties where cotton late and continued rains prevent routine controls. Numbers continue very high in central and south areas but weather suitable for control efforts; numbers and damage less where good control efforts made. Damage extremely high in south area where control efforts poor. (McQueen). GEORGIA - Punctured squares 94 percent on untreated Spalding County cotton. (Beckham). TENNESSEE - Continues very serious in western area as new emergence underway. Migration to north begun; will continue during remainder of season. Counts indicate 67 percent punctured squares compared with 43 percent previous week. Boll damage heavy in fields where little or no control used. Many fields considered total loss in southern tier of counties. Further increase expected. (Locke). SOUTH CAROLINA - Heavy increase in Florence area seriously damaged fields with inadequate controls. Ranged 0-10 per 100 squares in treated plots; 12-45 in untreated plots. Larval infestations ranged 0-63 percent in treated plots; 17.3-81 percent in untreated plots. (Taft et al., Aug. 16).

BOLLWORMS (*Heliothis* spp.) - ARIZONA - *H. zea* in Yuma, Graham, Pinal, Pima, and Maricopa Counties. (Ariz. Coop. Sur.). NEW MEXICO - *H. zea* larvae light in Tularosa area. (Hare). Infestations 4-6 percent around Artesia, Eddy County. (Campbell). Beneficial insects controlled young bollworms in most cotton-growing areas in State. Very few fields treated. (N.M. Coop. Rpt.). TEXAS - Noneconomic in High Plains area; continued light and scattered in Dawson, Garza, Lynn, Lubbock, Swisher, Hale, Yoakum, Terry, and Gaines Counties. (Rummel, Aug. 15). OKLAHOMA - Light to moderate in Kiowa and Marshall Counties. (Okla. Coop. Sur.). MISSOURI - Ranged 1-2 larvae and 1-15 eggs per 100 plants in 71 percent of 332 fields; controls applied on 676 acres. (Jones). ARKANSAS - Collected 13 *H. zea* July 10 in Desha County; 26 *H. zea*, 5 *H. virescens* August 16 in Cross County. (Boyer). LOUISIANA - Egg laying sufficiently high to require 4 to 5-day spray schedule. Situation expected to continue remainder of season. (Tynes, Aug. 14). Larval activity remains light in Madison Parish. Damaged squares ranged 1-14 (averaged 2.8) percent in 160 of 181 fields. Damaged bolls ranged 1-11 (averaged 4) percent in 80 of 82 fields. Larvae in 1-2 (average 1.03) percent of squares in 28 of 181 fields and in 1-2 (average 1.2) percent of bolls in 26 of 82 fields. Moth activity decreased; 114 *H. zea* and 1 *H. virescens* in blacklight trap. (Cleveland et al., Aug. 17). MISSISSIPPI - Injured squares in 21 of 30 fields in delta counties. Percent injury for all fields averaged 2.79 (ranged 0-18). Moth flight decreased. (Pfrimmer et al.). *H. zea* and *H. virescens* remained generally light last period. New hatch last period indicated pressure could rise in another week or so. Average percent infestation by county: Issaquena 3 in 30 fields; Adams 1 in 3; Quitman 6 in 15; Sharkey 2 in 30; Madison 2 in 15; Holmes 2 in 23; Chickasaw 3 in 6; Yazoo 2 percent in 16 fields. (Dinkins). TENNESSEE - Much damage continues over western area. Eggs and larvae ranged 1-11 per 100 terminals (average 4) in fields where infestations found. Larvae in 90 percent of fields checked. (Locke). ALABAMA - Some increase in numbers noted throughout State. (McQueen). GEORGIA - Light to very heavy in southern area. (French). SOUTH CAROLINA - Heavy numbers in Florence area severely damaged inadequately protected fields. Larval infestation ranged 0.25-36 percent in treated plots; 10.6-17 in untreated plots. Larvae per 100 terminals ranged 0.5-9.2 in treated plots; 2-9 in untreated plots. (Taft et al., Aug. 16).

CABBAGE LOOPER (*Trichoplusia ni*) - TENNESSEE - Continues problem in isolated fields over western area. (Locke). MISSISSIPPI - Heavy in some delta county fields. Disease killed larvae in test plots at Stoneville, Washington County. (Pfrimmer et al.). LOUISIANA - Infesting numerous fields in Red River Valley; larvae through some fields caused much defoliation. (Tynes, Aug. 14). ARIZONA - Light to moderate in fields in Pinal, Pima, Maricopa, and Yuma Counties. (Ariz. Coop. Sur.).

BEE T ARMYWORM (*Spodoptera exigua*) - TEXAS - Larvae light in Motley County. (Rummel, Aug. 15). LOUISIANA - Light in untreated experimental plots in Red River Valley. (Tynes, Aug. 14).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Leaf damage evident and widespread in Yuma and Gila Valleys of Yuma County and in Pinal County. (Ariz. Coop. Sur.).

FALSE CELERY LEAF TIER (*Udea profundalis*) - CALIFORNIA - Adults heavy at Visalia, Tulare County. (Cal. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Heavy and spotted; 80 percent of blooms damaged in some Graham County fields. Population and damage decreasing in Yuma County; counts unchanged and controls widespread in Pinal County. (Ariz. Coop. Sur.). MISSOURI - Plant bugs, mainly *Lygus* spp., light in 294 of 332 fields. (Jones).

STINK BUGS (*Euschistus* spp.) - ARIZONA - Damage heavy in Yuma, Maricopa, and Pinal Counties. (Ariz. Coop. Sur.).

A LEAF MINER - SOUTH CAROLINA - Damaging large acreage of cotton at Mayesville area; high percentage of leaves on lower tenth of plants heavily damaged. First such damaging infestation in area. Much leaf damage with some leaf drop should little affect fiber yield unless next generation very numerous. (Taft et al., Aug. 16).

SPIDER MITES (Tetranychus spp.) - LOUISIANA - Primarily T. urticae heavy enough in some northwest area fields to require control. (Tynes, Aug. 14). MISSISSIPPI - Heavy in 2 fields, medium in 4, and light in 3 of 30 fields in delta counties. (Pfrimmer et al.). TENNESSEE - Additional infestations in western area; old infestations not increasing rapidly for time of year. (Locke).

## POTATOES, TOMATOES, PEPPERS

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Abundant and damaging to commercial tomato and pepper plantings in Kent and Sussex Counties. (MacCreary). MARYLAND - Larvae increasing on processing tomatoes in Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Moths increasing in Lenawee County blacklight trap. Pepper growers should be alert to strengthen program. (Janes, Newman).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MARYLAND - Adults and larvae increasing in some untreated tomato fields in Queen Annes and Wicomico Counties (U. Md., Ent. Dept.).

POTATO APHID (Macrosiphum euphorbiae) - MARYLAND - Increasing gradually on tomatoes in all areas. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Increasing on peppers in central sections. (U. Md., Ent. Dept.).

VINEGAR FLIES (Drosophila spp.) - NEW JERSEY - Eggs ranged 18-48 per 3-inch slit per tomato at Salem, Bridgeton, Swedesboro, and Hammonton. (Ins.-Dis. Newsltr.).

## INSECT DETECTION

### New State Record

A POWDER POST TERMITE (Cryptotermes brevis) - NORTH CAROLINA - At Raleigh, Wake County, July 17, 1967. Det. by D. R. Smith. (p. 795).

### New County Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Carroll and Bureau Counties. (p. 783).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - At Gallup, McKinley County. (p. 792).

LARCH CASEBEARER (Coleophora laricella) - WASHINGTON - Garfield and Okanogan Counties. (p. 792).

## BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Heavy on lima beans in Spalding County. (Dupree). OHIO - Egg laying on garden snap beans in Delaware County. (Galford). COLORADO - Larvae in beans in Pueblo, Otero, and Weld Counties; range 1-10 per 10 plants. Adults on beans in Pueblo and Otero Counties. (Schweissing, Boyes).

A FLEA BEETLE (Systema frontalis) - WISCONSIN - Heavy, moderate damage to lima bean field near Arlington. (Wis. Ins. Sur.).

COWPEA CURCULIO (Chalcoedermus aeneus) - GEORGIA - Oviposition heavy on untreated field peas in Spalding County. (Dupree).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Moderate to heavy on field peas in Washington County. (Mercer, Harris).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Larvae moderate, damaging 40 acres of beans in Shafter, Kern County. (Cal. Coop. Rpt.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae in unsprayed lima beans in Sussex County. (MacCreary).

## COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - NEW YORK - Very numerous in Suffolk County. (N.Y. Wkly. Rpt., Aug. 14). DELAWARE - Abundant, damaging commercial cabbage plantings in Kent and Sussex Counties. (MacCreary). VIRGINIA - Light trap collections increasing at Painter; may be forerunner of extremely heavy infestation. In past, weather and naturally occurring nuclear polyhedrosis virus controlled larval numbers. (Hofmaster).

CABBAGE WEBWORM (Hellula rogatalis) - TEXAS - Larvae heavy, damaging collard field near Woodville, Tyler County. Feeding on buds and stalks killed plants. (Currie).

CABBAGE MAGGOT (Hylemya brassicae) - CALIFORNIA - Damage heavy to turnip plantings in Burney, Shasta County. (Cal. Coop. Rpt.).

CABBAGE APHID (Brevicoryne brassicae) - WISCONSIN - Heavy in cabbage in Columbia County; controls applied. (Wis. Ins. Sur.).

## GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - COLORADO - Adults taken in light traps in lettuce-growing areas at Rocky Ford and Fort Collins. (Schweissing, Alldredge).

LEAF BEETLES (Metriona spp.) - OKLAHOMA - M. bicolor and M. bivittata heavy, damaging Payne County sweetpotatoes. (Okla. Coop. Sur.).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 0-40 per onion plant in Otero and Pueblo Counties. (Schweissing).

## DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - NEW JERSEY - Second-brood larvae entering apple fruit in unsprayed block near Bridgeboro, controls unnecessary after next period. (Ins.-Dis. Newsltr.). INDIANA - Total of 8 moths taken in 20 virgin female traps in Vincennes area, larvae in apples. (Dolphin). WISCONSIN - Moths averaged 3 per day in Madison blacklight trap week ending August 15. Larvae in



untreated apples near Arlington. (Wis. Ins. Sur.). UTAH - Flight August 12 at Logan, Cache County. (Knowlton).

FALL WEBWORM (Hyphantria cunea) - INDIANA - Second-brood larvae in unsprayed apple orchards in Vincennes area; 1-2 webs per tree. (Dolphin). NEW MEXICO - Webbing in some pecan trees in Dona Ana County. (Campbell).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Total of 19 adults taken in bait jars compared with 17 previous week in Vincennes area. (Dolphin).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adult emergence increasing in Vincennes area; 1,212 males taken in 20 virgin female traps in unsprayed apple block compared with 1,074 males of previous week. (Dolphin).

APPLE MAGGOT (Rhagoletis pomonella) - NEW YORK - Heavier than usual in Niagara County week ending August 12; adults decreasing in Monroe County. (N.Y. Wkly. Rpt.). MICHIGAN - Mating pairs and stings on apples numerous in abandoned Kent County apple trees, controls should be maintained. (Klackle). INDIANA - Adults decreasing in Vincennes area orchards; larvae and prepupae present. Total of 101 adults taken on bait boards compared with 145 of previous week. (Dolphin). MINNESOTA - Decreasing throughout State. (Minn. Ins. Rpt.).

PLUM CURCULIO (Conotrachelus nenuphar) - INDIANA - Larvae taken in ripe peach drops in Vincennes area. (Dolphin).

EUROPEAN RED MITE (Panonychus ulmi) - NEW YORK - Major problem in Monroe County orchards; spotty in Niagara County. (N.Y. Wkly. Rpt., Aug. 14). INDIANA - Overwintering eggs laid on branch nodes in Vincennes area, leaf populations declining due to production of diapause eggs. (Dolphin). MICHIGAN - Damage not severe in oiled apple blocks in fruit areas of Kent and adjacent counties; increasing now and specific controls may be needed. (Klackle). WISCONSIN - Very heavy, severe bronzing to treated apple orchard near Green Lake. (Wis. Ins. Sur.).

SPIDER MITES (Tetranychus spp.) - NEW YORK - Major problem in Monroe County orchards; spotty in Niagara County. (N.Y. Wkly. Rpt., Aug. 14). CALIFORNIA - T. pacificus heavy on apple plantings in Tehachapi, Kern County. (Cal. Coop. Rpt.).

BLACK PECAN APHID (Myzocallis caryaefoliae) - TEXAS - Heavy, damaging pecans near Fredericksburg, Gillespie County. (Kowert).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Adults moderate in San Lorenzo, Alameda County. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - MISSOURI - Light damage to pecans in southeast area. (Jones).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Adult emergence moderate in Mayes County, light in Kiowa County. (Okla. Coop. Sur.).

## CITRUS

Citrus Insect Situation in Florida - Mid-August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 73 percent of groves (norm 53 percent); 56 percent economic (norm 38 percent). Population attained summer peak in early August and was much greater than normal. Widespread decrease is expected through mid-September, but some groves in all districts will harbor important infestations. Infestations will be heavier on fruit than leaves. Highest districts west, south, north, and central. TEXAS CITRUS MITE (Eutetranychus banksi) infested 54 percent of groves (norm 45 percent); 17 percent economic (norm 21 percent). Population decreasing and near normal for August; will be in low range through September. Highest

districts west and east. CITRUS RED MITE (Panonychus citri) infested 38 percent of groves (norm 46 percent); 19 percent economic (norm 25 percent). Decreasing and is below normal abundance for August; will be in low range Statewide through September and of little importance. Highest districts west and east. GLOVER SCALE (Lepidosaphes gloverii) infested 79 percent of groves; 29 percent economic. Population above normal and in high range. Decrease to moderate range expected. Highest districts south, east, and west. BLACK SCALE (Saissetia oleae) infested 86 percent of groves; 60 percent economic. Population decreasing rapidly but still above normal and in high range. Further decrease expected through November. Highest districts east, west, south, and central. PURPLE SCALE (L. beckii) infested 61 percent of groves; 1 percent economic. Population normal and low and will remain low. Highest district west. CHAFF SCALE (Parlatoria pergandii) infested 58 percent of groves; 1 percent economic. Population generally low and will be of little importance. High district west. YELLOW SCALE (Aonidiella citrina) infested 69 percent of groves; 4 percent economic. More common than usual for August but very few infestations important. Decrease expected. Highest district central. WHITEFLIES below normal abundance and expected to remain in low range. MEALYBUGS dropped into low range and will remain low. (W. A. Simanton (Citrus Expt. Sta. Lake Alfred)).

BLACK SCALE (Saissetia oleae) - CALIFORNIA - Heavy on citrus in Napa, Napa County. (Cal. Coop. Rpt.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Treatments continue in Yuma County orchards. (Ariz. Coop. Sur.).

#### SMALL FRUITS

BLUEBERRY MAGGOT (Rhagoletis mendax) - MASSACHUSETTS - Adults numerous on sticky board traps; larvae damaging some blueberry fields. (Tomlinson, Aug. 11).

CRANBERRY FRUITWORM (Acrobasis vaccinii) - MASSACHUSETTS - Moth flight and oviposition past peaks in State. (Tomlinson, Aug. 11).

#### FOREST AND SHADE TREES

ELM LEAF BEETLE (Pyrrhalta luteola) - UTAH - Damaging in many parts of Salt Lake County. Many adults entered homes due to recent cold nights. Some injury at Logan, Cache County. Damage more widespread in Weber, Salt Lake, and Utah Counties and in Green River area, Emery County. (Knowlton). ARIZONA - Much damage on elms in Kingman area, Mohave County. (Ariz. Coop. Sur.). NEW MEXICO - One Siberian elm infested in Gallup, McKinley County, for new county record. Heavy in Albuquerque area; large trees almost defoliated. (Heninger, Kloefer). KANSAS - Third generation heavy in Sedgwick County. (Redding). OHIO - Second-generation larvae on Chinese elm in Franklin County; heavily damaged 1 landscape planting. (Walker). Second-generation eggs hatching in Franklin County. (Rose).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - PENNSYLVANIA - Larvae of this species and Heterocampa guttivitta severely defoliated more than 500 acres of forest, mainly maple and ash, in Sullivan County. Pupation well underway. (Gesell, Aug. 10).

LARCH CASEBEARER (Coleophora laricella) - WASHINGTON - Larvae and pupae very light on Umatilla National Forest in Garfield County in southeast areas of State; no damage found. Also at Loup Loup Summit west of Okanogan, Okanogan County, marking westernmost spread in State; no trees damaged. These are new county records. (Pettinger, USFS).

MIMOSA WEBWORM (Homadaula albizziae) - IOWA - Damaging honeylocust in central area. (Iowa Ins. Sur.). OHIO - Moths common, laying eggs on Marion County honeylocust. (Galford). Adults, eggs, and first instars in block of 300

honeylocust in Mahoning County. (Kelly, Campbell). NEW JERSEY - Common on mimosa, honeylocust and Moraine locust trees. (Ins.-Dis. Newsltr.).

FALL WEBWORM (Hyphantria cunea) - MICHIGAN - Very abundant on birch, maple, oak, and other trees and shrubs. (Wallner). MINNESOTA - Extensive webbing on shade trees throughout State. (Minn. Ins. Rpt.). NEW MEXICO - Webs 1-5 per tree on poplar at Albuquerque, Bernalillo County. (Heninger).

A LEAFHOPPER (Erythroneura aclys) - OHIO - Adults and nymphs heavy; severely damaged redbud trees in Franklin County. (Davidson).

SYCAMORE LACE BUG (Corythucha ciliata) - MICHIGAN - Adult and nymphal colonies numerous on ornamental sycamores in Ingham County. Feeding bronzed foliage. (Dowdy).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Infestation 85-100 percent on McPherson County pines. (Redding).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - NEW YORK - Larvae on Nassau County pine. (N.Y. Wkly. Rpt., Aug. 14).

SPRUCE GALL APHIDS (Adelges spp.) - OHIO - A. abietis and A. cooleyi galls abundant on 100 spruce trees in Belmont County planting; some A. abietis adults emerging on Norway spruce and some A. cooleyi adults emerging on blue spruce. (Ellis, Campbell).

#### WEATHER OF THE WEEK ENDING AUGUST 21

**HIGHLIGHTS:** Floods caused \$200 million damage in Fairbanks area. Continued hot and dry in Far West. Cool with scattered showers most of Central and East.

**PRECIPITATION:** Rains diminished in central Alaska and at Fairbanks and Nenana. The water receded after flood disaster there. Early week showers were generally light and widely scattered from southwestern deserts to the Great Plains. Weekend thunderstorms brought moderate to heavy scattered showers in central and eastern United States. Most weekly totals were less than 1 inch but a few localities in Texas, Arkansas, along the gulf coast, and the Atlantic coast received more than 3 inches. The Far West continued extremely dry. No appreciable rains fell in Montana. Dry thunderstorms started over 200 fires in Idaho's forests and ranges. Many stations in Oregon have received no rain since June 22 making this longest dry spell on record.

**TEMPERATURE:** Hot weather has continued west of the Rockies for 5 weeks. Pendleton, Oregon, registered 101° to 105° each afternoon, but at coastal locations, onshore winds held afternoon readings to the 60's and 70's. East of the Rockies, high pressure, clear skies, widespread sunshine, and cool temperatures prevailed. Many central areas averaged 6° to 10° cooler than normal for second week. In parts of central and eastern United States, this was ninth cool week. Early in week, 90° maximums were common over the western Plains. As weekend approached, polar continental air pushed into the northern Plains dropping temperatures into 40's on several mornings. Frost occurred in some mountain valleys in Colorado and scattered low places from South Dakota to western Upper Michigan. As cold air marched southward, the temperature at Springfield, Missouri, fell from 92° on Thursday afternoon to 47° Sunday morning. Afternoon temperatures reached the 90's far up Atlantic coast on Saturday afternoon--90's at Philadelphia--but remained in the 60's in the middle Mississippi Valley--63° at Moline, Illinois. By Sunday, cool air had advanced far southward and eastward with afternoon temperatures in the 70's and low 80's. Citizens were reminded that autumn is rapidly nearing. (Summary supplied by Environmental Data Service, ESSA)

## MAN AND ANIMALS

MOSQUITOES - TEXAS - Pleasure Island trap indicated 1 major flight of Culex salinarius, and 1 of Aedes sollicitans; airport trap showed 2 emergences of Psorophora confinnis and 1 of A. sollicitans. Urotaenia spp. numerous during July at Pleasure Island and south Beaumont. Beaumont trap indicated 1 heavy flight of P. confinnis in south and numerous major flights in north continued into mid-July. Landing rates for Pleasure Island and Rose Hill points indicated emergence of salt-marsh species; flight extended into Sabine Pass area 2 days later. C. salinarius numerous at Port Arthur area. Culex spp. throughout county but numbers lightest of year. A. sollicitans at Port Arthur area and extended into mid-county area. Aedes vexans light. Anopheles crucians throughout county. Anopheles quadrimaculatus diminished during July. (Jefferson Co. Mosq. Rpt.). LOUISIANA - Larval collections in Jefferson Parish August 12-18: Anopheles crucians, Aedes vexans, Culex pipiens quinquefasciatus, and C. salinarius. Mansonia perturbans increased in light trap collections on west bank of river. (Stokes). KANSAS - A. vexans females dominant August 2-16 at Manhattan; highest August 7 with 48. (Simpson). UTAH - Mosquitoes troublesome at Logan and elsewhere in Cache Valley communities. (Knowlton). MINNESOTA - Trap counts for week ending August 12 dropped from 17,000 previous week to 5,000; 50+ percent A. vexans. Total of 2,348 larvae taken; 78 percent A. vexans. (Minn. Ins. Rpt.). WISCONSIN - Numerous throughout State. A. vexans major annoyance in Madison area. Ranged 100-600 adults per trap August 14; breeding throughout area. (Wis. Ins. Sur.). PENNSYLVANIA - C. restuans and C. pipiens larvae very numerous in ditches and wading pools in Centre County; some pupae. (Gesell, Aug. 6).

FACE FLY (Musca autumnalis) - MARYLAND - Ranged 6-40 per face in 4 herds of dairy cattle in Frederick County. (U. Md., Ent. Dept.). MICHIGAN - Adults increasing on pastured beef and dairy herds in central counties; 35+ per animal on some herds. Cattle with watering eyes and pinkeye increasing. (Dowdy). WISCONSIN - Moderately annoying to cattle throughout State. (Wis. Ins. Sur.). NORTH DAKOTA - Severe and annoying cattle and horses in Richland and Ransom Counties; up to 50 per face on cattle and 100 per face on horses in many herds. (Brandvik). IOWA - Adults annoying cattle in Woodbury, Monona, Ida, and Crawford Counties. (Iowa Ins. Sur.). MISSOURI - Ranged 2-20 per animal in west-central and central areas. (Peters, Thomas). NEBRASKA - Ranged 3-35 per face on 1 herd near Lincoln, Lancaster County. (Perdue, Aug. 17). UTAH - Light to moderate on horses and cattle in Logan and Avon area, Cache County. (Knowlton).

SCREW-WORM (Cochliomyia hominivorax) - Total of 11 cases reported in U. S. August 13-19 as follows: TEXAS - Terrell 2, Crockett 2, Brewster 4, Presidio 2; ARIZONA - Navajo 1. Total of 99 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 2, Territorio sur de Baja California 10, Sonora 9, Chihuahua 31, Coahuila 35, Nuevo Leon 10, Tamaulipas 2. Total of 90 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operations underway to prevent establishment of self-sustaining population in U. S. Sterile screw-worm flies released: Texas 35,724,000; Arizona 200,000; Mexico 92,190,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - UTAH - Moderate on range cattle in Logan Canyon, Cache County, and in Garden City and Laketown area of Rich County. (Knowlton). OKLAHOMA - Moderate on cattle in Mayes and Cleveland Counties. (Okla. Coop. Sur.). MISSISSIPPI - In Adams County, 300 cattle averaged 200 flies per head; 139 treated cattle in Hinds County averaged 12 per head; 125 untreated cattle in Oktibbeha County averaged 1,000 per head. (Dinkins). MISSOURI - Ranged 50-200 per animal on Boone County herd. (Peters). WISCONSIN - Annoyance moderate on cattle throughout State. (Wis. Ins. Sur.). MARYLAND - Below normal on Frederick County dairy cattle. (U. Md., Ent. Dept.).

STABLE FLY (Stomoxys calcitrans) - MISSOURI - Ranged 5-25 per animal in Boone County. (Peters). NEBRASKA - Decreasing throughout State; ranged 3-5 and 10-15 per leg on 2 pastured herds and ranged 4-5, 10-15, and 15-20 per leg on 3 groups

of feedlot animals near Lincoln, Lancaster County. (Campbell, Perdue, Aug. 17).  
WISCONSIN - Severely annoying cattle in Calumet, Wood, Chippewa, Iowa, Richland, Vernon, La Crosse, and Trempealeau Counties; moderately annoying in other areas. (Wis. Ins. Sur.).

DEER FLIES (Chrysops spp.) - WISCONSIN - Numerous and annoying man and cattle throughout State. (Wis. Ins. Sur.).

AN ASSASSIN BUG (Triatoma gerstaeckeri) - TEXAS - Unusually high numbers and numerous bites reported at Baytown, Harris County; Lampasas, Lampasas County; and Hamilton, Hamilton County. One person in Hamilton hospitalized due to bites. (McCutchen et al.).

#### HOUSEHOLDS AND STRUCTURES

A POWDER-POST TERMITE (Cryptotermes brevis) - NORTH CAROLINA - Light in oak flooring and furniture in residence at Raleigh, Wake County, July 17, 1967. Det. by D. R. Smith. (Moore). This is a new State record. (PPC).

#### STORED PRODUCTS

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - SOUTH CAROLINA - Unspecified termite reported in CEIR 17(23):492 as damaging cotton bales in warehouse at Bishopville, Lee County, determined as this genus by M. R. Smith. (PPC).

#### BENEFICIAL INSECTS

LADY BEETLES - IOWA - Moderate on corn, soybeans, and alfalfa in State, but lighter than earlier in season. (Iowa Ins. Sur.). MARYLAND - Hippodamia convergens abundant on tobacco infested with green peach aphid in Anne Arundel County. (U. Md., Ent. Dept.).

LACEWINGS - IOWA - Larvae and adults in corn and alfalfa in west-central area. (Iowa Ins. Sur.).

DAMSEL BUG (Nabis spp.) - IOWA - Adults averaged 4 per 10 sweeps in alfalfa in west-central area. (Iowa Ins. Sur.).

CHINESE MANTID (Tenodera aridifolia sinensis) - SOUTH CAROLINA - Noted in Clemson and Walhalla areas. Not known to occur throughout State. Some specimens in Greenville and Anderson in past. (Nettles et al., Aug. 15).

A TACHINA FLY (Lydella thompsoni) - WISCONSIN - Killed about 5 percent of Ostrinia nubilalis larvae in corn at Galesville. (Wis. Ins. Sur.).

A EULOPHID WASP (Sympiesis viridula) - WISCONSIN - About 10 percent of Ostrinia nubilalis larvae parasitized in corn at Galesville. (Wis. Ins. Sur.).

#### FEDERAL & STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - NEVADA - Melanoplus sanguinipes, M. packardii, M. bivittatus, Dissosteira carolina, and Arphia sp. varied 3-15 per square yard in native meadows near Minden and Gardnerville, Douglas County. (Cooney). CALIFORNIA - Nymphs, probably M. devastator, on about 2,000 acres of rangeland in Perfumo Canyon area and San Luis Obispo, San Luis Obispo County; mixed with Camnula pellucida. (Cal. Coop. Rpt.). NEW MEXICO - Cooperative control program to start August 17-18 on 485,724 acres of rangeland in Lincoln County north of Capitan and in the Nogal area. Populations heavy in other areas of State; bands around fields treated in some farming areas to protect crops. (N.M. Coop. Rpt.).

COLORADO - Numerous and damaging on wasteland and crop borders in Weld County; controls necessary. (Boyes). OKLAHOMA - M. differentialis and M. bivittatus damaging okra leaves in Payne County. (Okla. Coop. Sur.). NORTH DAKOTA - Non-economic in Kidder, Pierce, McHenry, and Stutsman Counties; economic on corn in east-central McHenry and west-central Pierce Counties. Melanoplus sanguinipes, M. bivittatus, and M. femurrubrum dominant. (Coupe). Noneconomic in Logan and McIntosh Counties; economic in central Morton, southwestern Burleigh, and west-central Emmons Counties. Ranged 10-20 per square yard in wheat and 20-60 per square yard in some alfalfa along Heart River in central Morton County; ranged 10-30 per square yard in green oats and 15-60 per square yard in some alfalfa in Burleigh County. Ranged 10-40 per square yard in Emmons County flax fields; damaging oats, alfalfa, and flax. M. differentialis, M. femurrubrum, M. bivittatus, M. packardii, and M. sanguinipes dominant. (Stoltenow). Light north of State Highway 13, north of Hankinson and west of Lisbon in Richland and Ransom Counties. Economic in northwestern Richland County; ranged 8-20 per square yard in some alfalfa, 11-20 per square yard in margins. M. differentialis, M. bivittatus, and M. femurrubrum dominant. M. bivittatus ovipositing in some areas. Noneconomic to light in sandhills range areas of Ransom and Richland Counties; economic in northeastern section, up to 12 per square yard. (Brandvik). WISCONSIN - Generally light throughout State; up to 40 per square yard in few alfalfa fields. Melanoplus femurrubrum adults and nymphs in La Crosse and Trempealeau Counties; 10 percent adults near Montello. M. bivittatus and M. differentialis adults light in Wood County; M. bivittatus decreasing each year due to feeding on treated snap beans. (Wis. Ins. Sur.). MARYLAND - Melanoplus spp. light to medium on alfalfa and red clover in Queen Annes County. (U. Md., Ent. Dept.).

A CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - CALIFORNIA - Approximately 23 cherry trees on 7 properties at Hilts, Klamath River, and Etna, Siskiyou County, sprayed along with trees on infested and adjacent properties. Fruit sampling decreasing. (Cal. Coop. Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - MICHIGAN - Two detection traps removed from Jackson with no seasonal finds reported for area. (Moore).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Male trapped on stickyboard in calamondin tree at Tavares, Lake County. Second collection from Lake County. (Fla. Coop. Sur.).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - No adults taken this season in Duck Lake area, Calhoun County. (Moore). MASSACHUSETTS - Seven moths taken in cranberry bog blacklight trap at East Wareham, Plymouth County. (Tomlinson, Aug. 11).

JAPANESE BEETLE (Popillia japonica) - MICHIGAN - Largest weekly collections to date, 247 beetles in rural Monroe and Lenawee Counties and 301 in Battle Creek area traps this period. Five adults taken in Metropolitan Detroit, 7 in Ypsilanti, and 13 in Chikaming Township of Berrien County. None taken in Lansing, Grand Rapids, or Bay City trapping areas. (Moore). RHODE ISLAND - Adults emerging in several areas throughout State; first of year in some instances. (Mathewson et al.). MARYLAND - Adults heavy on corn silks near Snow Hill, Worcester County. Light to medium on soybeans in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Light to medium on soybeans in Henrico, Hanover, and Gloucester Counties. Heaviest on field margins. (Isakson, Birdsall). FLORIDA - Five additional adults in truckload of out-of-State string beans received at Dania, Broward County. (Weaver). Only 1 alive. Appropriate regulatory measures initiated by State and Federal authorities. (Fla. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Young larvae increasing in cotton bolls in southern Dona Ana County. (Ellington). ARIZONA - Reported in fields in many parts of Maricopa, Yuma, and Pinal Counties; appearing in Graham County. Percent infestation 8-32 in bolls collected from 10 untreated fields at Valley Experiment Station in Yuma County. (Ariz. Coop. Sur.).

NEVADA - First adults of season collected in Pahrump Valley, Nye County, in Frick sex lure traps. One male August 7 and 5 males August 10. (Nev. Coop. Rpt.). CALIFORNIA - Approximately 125,000 acres of cotton aerially sprayed to date. Planned series of 10 treatments at Cantil, Kern County, and 8 in Palo Verde Valley, Riverside County, nearing completion. No infestation found this season in Cantil area. Boll infestations of 3-4 percent of cotton in Palo Verde Valley; treatments may have to be reinitiated in September to keep infestation below 10 percent. Acreage requiring treatment in Imperial County increasing rapidly; overall treatment may total 400,000+ acres. (Cal. Coop. Rpt.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Cooperative control program on 453,025 acres completed August 16. (N. M. Coop. Rpt.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Second seasonal treatment at Fresno, Fresno County, and third dust application at Stratford, Kings County, completed; survey negative in these areas and at Livermore, Alameda County. Second chemical application underway in Sacramento area, Sacramento County, and third treatment progressing at Davis, Yolo County; no new infestations found. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - SOUTH CAROLINA - Adults showing up in Clemson this season. (Nettles et al., Aug. 15).

#### HAWAII INSECT REPORT

Vegetables, Fruits - Fruit fly survey with male lure traps (68 for each species) conducted May 24-June 21. ORIENTAL FRUIT FLY (Dacus dorsalis) most prevalent with mean of 30.7 flies per trap day. MELON FLY (D. cucurbitae) had mean of 17.9 flies per trap day. MEDITERRANEAN FRUIT FLY (Ceratitis capitata) least prevalent with total catch of 5 for survey period, or mean of 0.0027 fly per trap day. Melon fly hosts observed were cucumber, squash, tomato, cantaloup, momordica, and wild cucumber. Oriental fruit fly and Mediterranean fruit fly hosts included mango, peach, papaya, guava, and wild passion-fruit. Preferred hosts collected from March to May on Hawaii Island were heavily infested. Rose-apple, guava, coffee, mango, and peach produced mixed infestations of oriental fruit fly and Mediterranean fruit fly. Tomato produced 0.4 percent oriental fruit fly and 99.3 percent melon fly. Wild momordica infested only with melon fly. Parasitism ranged from low of 0.3 percent in tomato to high of 85.2 percent in coffee. Opius oophilus (a braconid) dominant in parasite recoveries. (Fruit Fly Investigations, USDA). TURNIP APHID (Hyadaphis pseudobrassicae) and GREEN PEACH APHID (Myzus persicae) light to medium on daikon fields at Koko Head, Oahu. Heavy population caused heavy foliar damage to one field in mid-July. (Funasaki). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum), CARMINE SPIDER MITE (Tetranychus telarius), and LEAF MINER FLIES (Liriomyza spp.) continue troublesome at low elevation areas of Nanakuli, Waimanalo, and Waianae, Oahu; light to medium in many eggplant and snap bean fields. Leaf miner flies heavy on tomato, Chinese peas, cucumber, and squash. On Maui, whiteflies heavy on snap beans at Makawao and Pukalani; carmine spider mite medium on bell pepper at Kihei and on eggplant at Puunene. (Funasaki et al.).

General Pests - Adults of a PLATASPID BUG (Coptosoma xanthogramma) feeding on young leaves and fruits of Chinese banyan at Honolulu, Oahu; eggs, nymphs, and adults numerous on indigo at Kaneohe and on rattle-box (Crotalaria sp.) at Waimanalo. Adults light in several snap bean fields at Waimanalo. (Clagg et al.).

Beneficial Insects - Adults of a TACHINA FLY (Trichopoda pennipes var. pilipes) common on various flowers at Kahului and Makawao on Maui and at Waianae and Waimanalo on Oahu. (Miyahira, Funasaki).

Miscellaneous Pests - GIANT AFRICAN SNAIL (Achatina fulica) very active due to rains at Kahului and Haiku, Maui. Heavy damage in backyard plantings at Kahului. VAGRANT GRASSHOPPER (Schistocerca vaga) surveys at Ewa, Nanakuli, and Waianae on Oahu indicate breeding mostly on weeds in and around farms and residential areas. Very common in but no damage on sugarcane and vegetables. (Jackson).

LIGHT TRAP COLLECTIONS

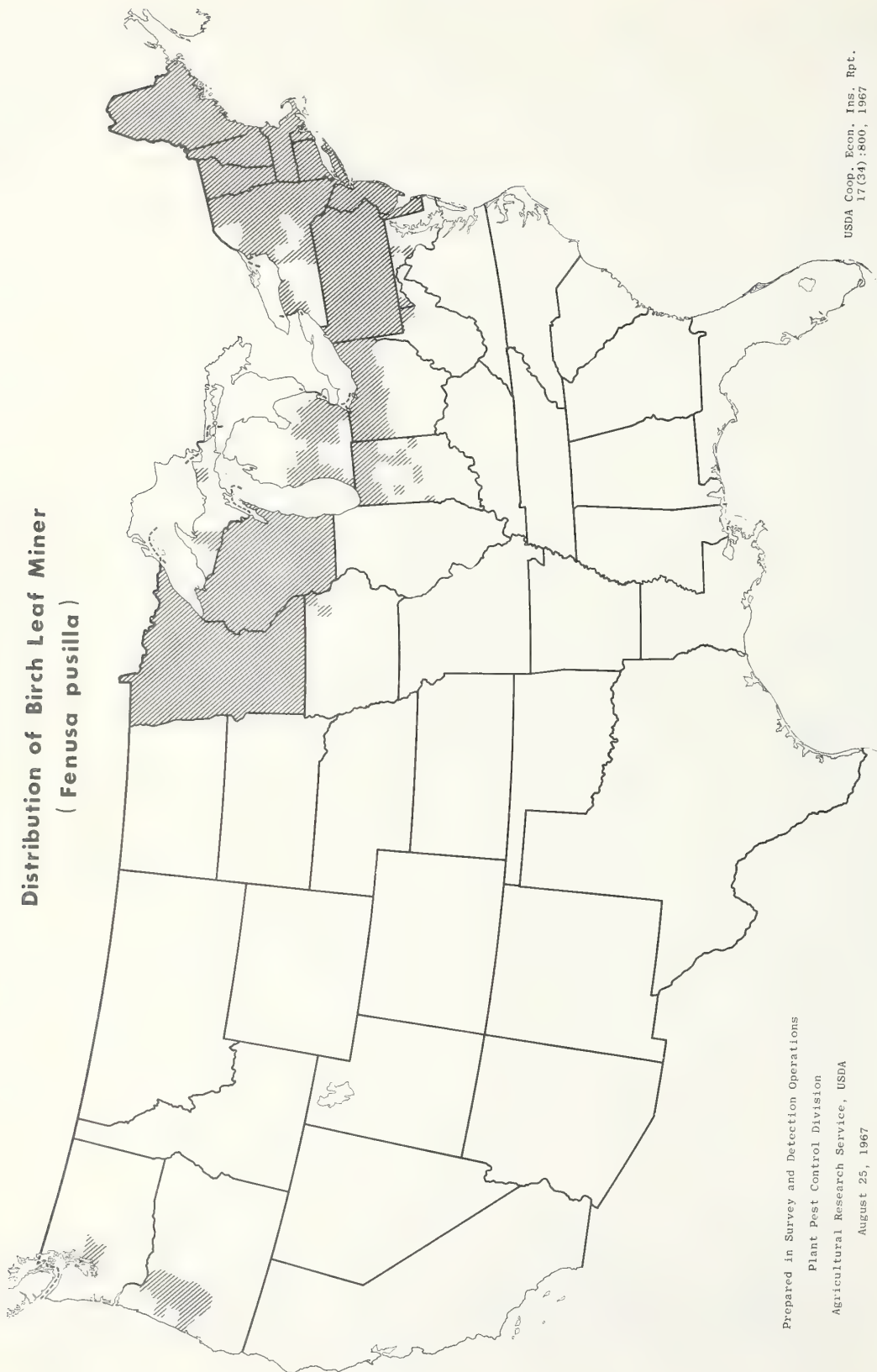
State	County	Date	Temperature (° F.)	Precipitation (inches)	Trap Type	Crops
FLORIDA	Gainesville	8/16			BL	6
GEORGIA	Tifton	8/2-9	69-94	0.13	1LBL	15
ILLINOIS (County)	Champaign	8/11,12,17	55-80	trace		
INDIANA (Counties)	Jackson	8/6-12			BL	39
	Posey	8/6-12			BL	10
	St. Joseph	8/6-12			BL	3
	Tiptecanoe	8/6-12			BL	7
IOWA (Counties)	Louisia	8/1-7			BL	24
	Monona	8/1-11			BL	17
KANSAS	Great Bend	8/8-14			BL	168
	Hiawatha	8/14			BL	7
	Powhattan	8/14-18			BL	3
MARYLAND	Centreville	8/9-15				64
	Snow Hill	8/9-15				701
MINNESOTA	Crookston	8/9-16				11
	Fergus Falls	8/9-16				38
	Shakopee	8/9-16				11
	Worthington	8/9-16				11
MISSISSIPPI	Rolling Fork	8/12-18	57-88	trace	BL	4
	Stoneville	8/12-18	56-88	trace	2BL	27
	Tunica	8/12-18	55-87		BL	23
MISSOURI	Portageville	8/5-10				105
	Portageville	8/11-18				33
NEW JERSEY	Cedarville	8/14-18			BL	4
	Evesboro	8/14-18			BL	2
	Hamonton	8/14-18			BL	3
	Plainsboro	8/14-18			BL	2
NORTH DAKOTA	Bowman	8/14				2
	Fargo	8/14				2

SPD.





**Distribution of Birch Leaf Miner  
( *Fenusa pusilla* )**



Prepared in Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service, USDA  
August 25, 1967

USDA Coop. Econ. Ins. Rpt.  
17(34):800, 1967

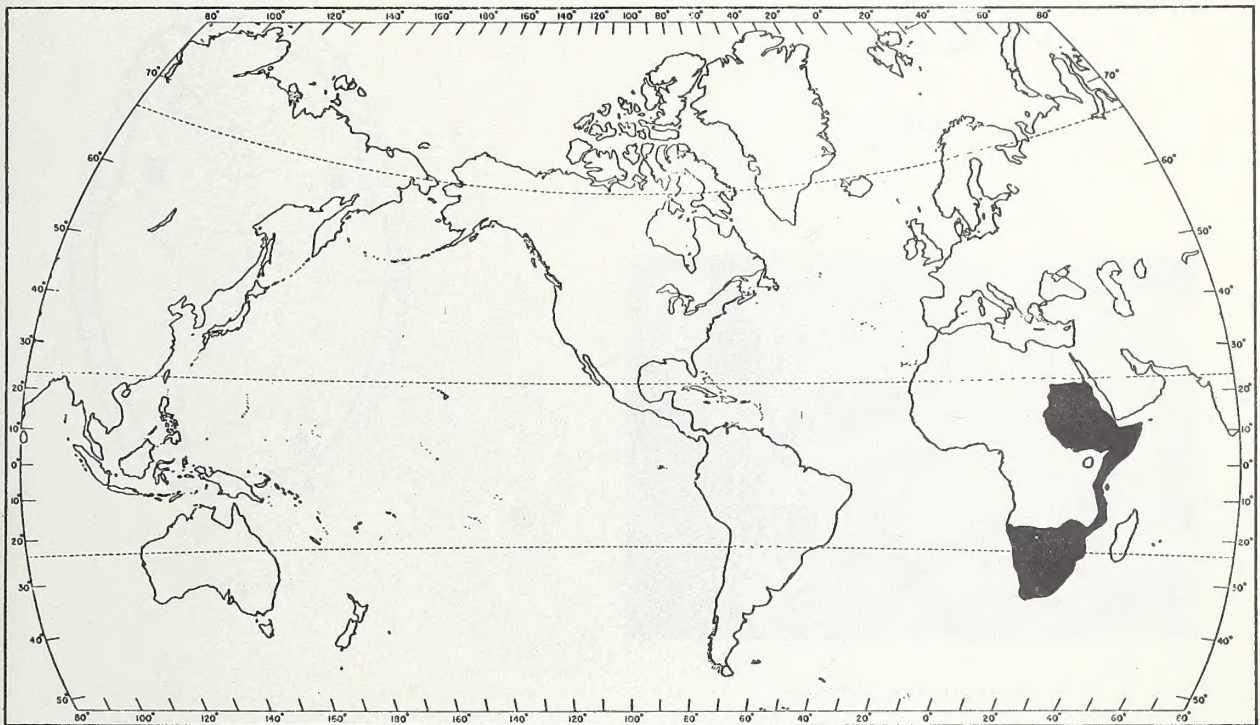
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

TWO-SPOTTED CITRUS PSYLLID (Spanioza erythrae (Del Guercio))

Economic Importance: The two-spotted citrus psyllid causes conspicuous pitting and curling of citrus leaves on the east coast of Africa, from Ethiopia south to the Cape. Serious damage to citrus nursery stock, particularly new growth, may occur. Nymphs cause pitting of the leaves by feeding on the underside of the foliage. Pitted leaves do not regain their shape after the insect leaves. In Ethiopia, serious damage to lemon was reported in 1961 and to orange in 1963.

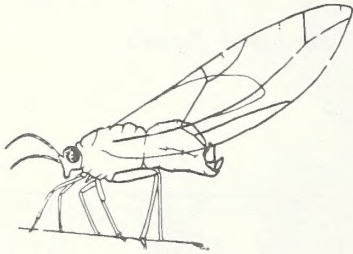
Distribution: East Africa, Ethiopia, South Africa, and Sudan.

Hosts: Citrus and plants of the citrus family.



Life History and Habits: The insect breeds all during the year; however, it is more noticeable when plants produce new growth. Adults deposit eggs only on succulent shoots. Hatching occurs in 5-7 days in the summer and the small nymphs settle on the underside of leaves where they feed. Each individual remains in a shallow pit unless disturbed. Because nymphs are stationary on the leaves, they are often mistaken for scale insects. The nymphal stage lasts on the average 20 days in summer and 30 in winter. There are five nymphal instars. The pocked appearance of the leaves is the primary indication of the presence of the insects. Adults fly rapidly and are not easily captured on the foliage. Excrement from both nymphs and adults resembles tiny white eggs. The ground or vegetation under a severely infested tree appears as though dusted with powder.

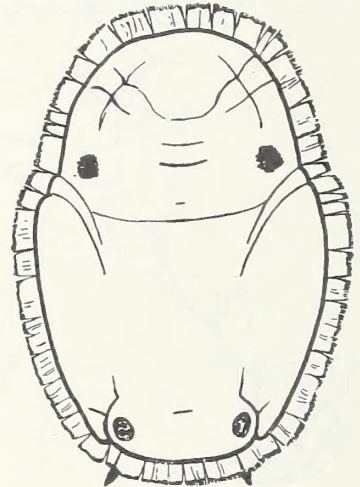
Description: ADULT - Length 2 mm., wing span 6 mm. Pale green with black eyes when newly emerged, but darkens with age until the head and limbs are dusty black; thorax light brown; underside of abdomen yellow, dorsum gray. Wings clear. The males and females differ in the shape of the abdomen - the male's being blunt, female's sharp pointed. EGG - Length 0.5 mm. Smooth pear-shaped yellow. NYMPH - Length 0.5-2 mm. Oval, flat, yellow with 2 red eyespots near front margin, a narrow white fringe of wax around outer edge of insect.



Adult



Damage to Citrus



Nymph

Spanioza erthraea (Del Guercio)

Selected References: Van der Merwe, C. P. 1923. J. Dept. Agr. (Union of South Africa) 7(2):135-141. Harris, W. V. 1936. East Afr. Agr. J. 1(6):498-500. Adult and nymph from Harris. Damage photograph from USDA.

Prepared in Survey and Detection  
Operations in cooperation with  
other ARS agencies

U. S. Dept. Agr.  
Coop. Econ. Ins. Rpt.  
17(34):801-802, 1967



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