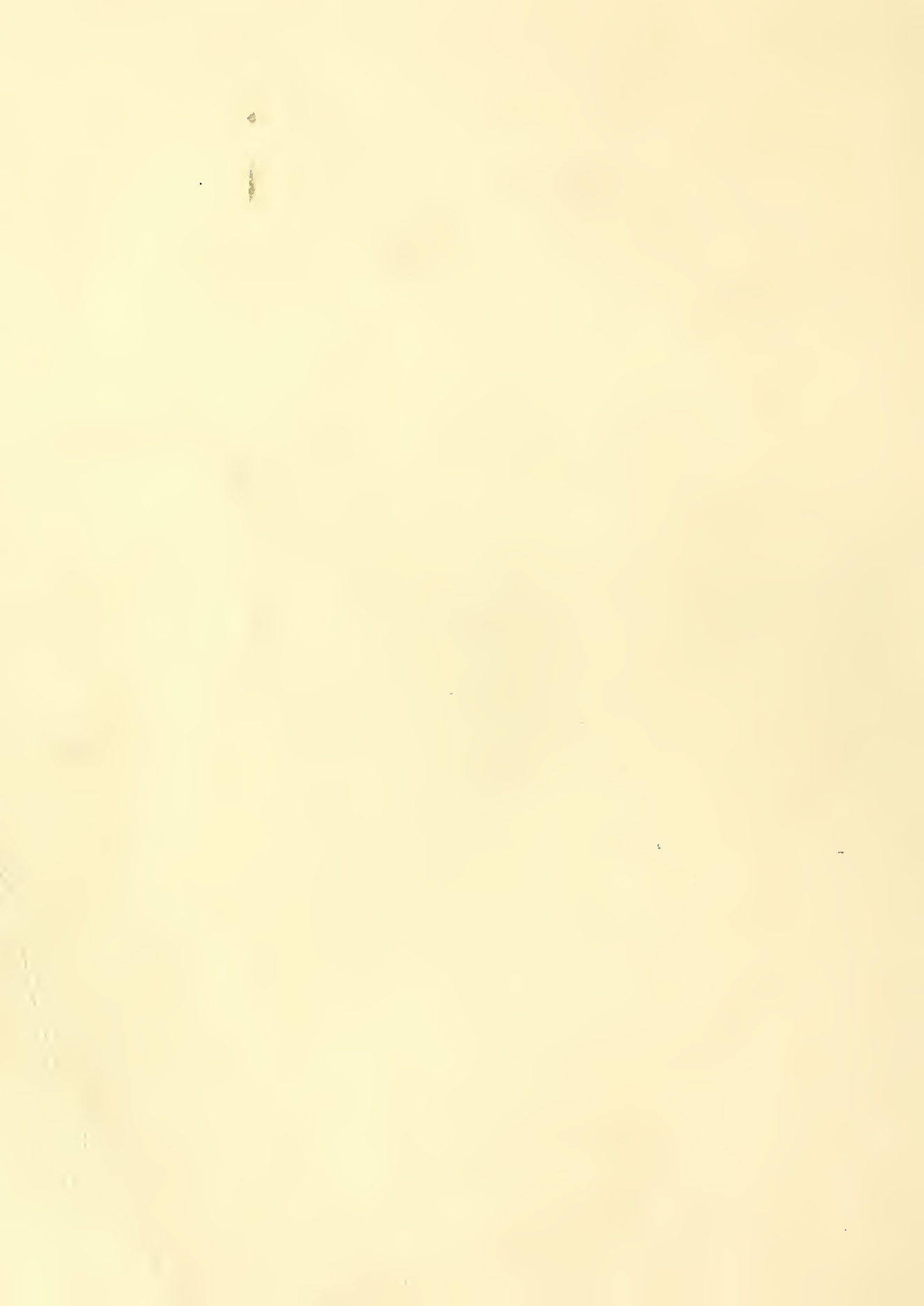


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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PROTECTION 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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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG severe on wheat in scattered areas of Oklahoma. (p. 191).

EUROPEAN CORN BORER overwintering larval survival high in southern Illinois. (p. 191).

HEEL FLY running cattle in southwest Texas. (p. 193).

CATTLE LICE heavy in Oklahoma and Arkansas. (p. 194).

Prediction

WESTERN PEACH TREE BORER expected to require controls in Montana in 1970. (p. 197).

Detection

New State records include ALFALFA WEEVIL from Florida (p. 191), a GRASSHOPPER and two ASPARAGUS BEETLES from Nevada (p. 192), and a SYMPHYLAN from Missouri (p. 192).

For new county and island records see page 195.

Special Reports

Summary of Insect Conditions in the United States - 1969

Deciduous Fruits and Nuts (pp. 196-201)

Citrus (pp. 201-203)

Other Tropical and Subtropical Fruit (p. 203)

Small Fruits (pp. 203-204)

Origin and Distribution of Daylily Thrips, Frankliniella hemerocallis Crawford. (p. 205).

Distribution of Army Cutworm. Map. (p. 206).

Survey Methods. Selected References 1944. Part XXVII. (pp. 207-208).

Some First Occurrences of Season

TARNISHED PLANT BUG nymphs in Florida; EASTERN TENT CATERPILLAR larvae in Alabama; APPLE APHID in Washington; HORN FLY adults in Oklahoma; ORANGE TORTRIX larvae in Oregon; and HEEL FLY in Texas.

Reports in this issue are for week ending March 20 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING MARCH 23

HIGHLIGHTS: The West cooled after 9 consecutive weeks of above-normal temperatures. Heavy snow fell in parts of the central Great Plains but most had melted by the weekend. Flood-producing rains occurred in the Deep South.

PRECIPITATION: Two large storms brought heavy snow to the Nation last week. The first of these was in progress at the end of the previous week. It dumped record-breaking amounts in 4 States: Up to 30 inches in southeastern Kansas, 27 inches in southwestern Missouri, 20 inches in northeastern Oklahoma, and 14 inches in northwestern Arkansas. The storm weakened as it moved eastward to the Ohio River Valley and into Pennsylvania. Rain and locally heavy thunderstorms occurred south of the snow belt from central Arkansas and western Tennessee to the central gulf coast. The second important storm developed in the Far Northwest early in the week. It intensified as it crossed the Rocky Mountains. It dumped heavy snow in southeastern Montana, central Wyoming, northeastern Colorado, northwestern Kansas, and south-central Nebraska. A third disturbance caused heavy thunderstorms and torrential rains across the Southland. It developed in eastern Texas about midweek, moved eastward across the Gulf States and then northeastward. Weekly rainfall totals approached or exceeded 8 inches in parts of Mississippi and Alabama. Columbus, Mississippi, measured 5.65 inches Friday morning. The weekly total at Birmingham, Alabama, was 8.92 inches. The heavy rains in Mississippi, Alabama, and Georgia caused flash flooding closing some roads and forcing some families from their homes. After bringing heavy rains to the Southeast, the storm moved northeastward and produced stormy weather to the eastern third of the Nation. Snow in the Northeast and the Appalachians and rain along the Atlantic coast. Mixtures of snow, sleet, and freezing rain fell in some places increasing the hazards of highway travel. The week ended with inclement weather continuing over much of the East. Weather of the week continued on page 204.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Chorizagrotis auxiliaris) - COLORADO - Larvae remain in northeastern area wheat; snowstorms kept activity low. (Johnson). OKLAHOMA - Larvae ranged 0-2 per linear foot in wheat in Major County. (Okla. Coop. Sur.).

GREENBUG (Schizaphis graminum) - TEXAS - Damage decreased in most Rolling Plains counties week of March 9-13. Damage currently moderate to heavy in Foard County, light to moderate in Wichita County. Damage light in Wilbarger, Young, and Hall Counties. Small grains growing well. (Boring). OKLAHOMA - Ranged 0-40 per linear foot in most wheat in Major and Alfalfa Counties; up to 125 per linear foot in scattered fields in Major County. Ranged as high as 300 per linear foot in Noble County. Moderate in Garfield and Kiowa Counties. Scattered fields sprayed in most areas. Averaged 6 per linear foot in barley in Major County. (Okla. Coop. Sur.). COLORADO - Surveys negative in wheat in northeastern areas. (Johnson). ARIZONA - No buildup on barley, oats, or wheat at Yuma, Yuma County. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - FLORIDA - Slowly increasing, nymphs and adults 160 per 100 sweeps of alfalfa, at Gainesville, Alachua County. (Mead).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - ILLINOIS - Overwintering larval survival in southern section ranged 89-98 percent. (Ill. Ins. Rpt.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ILLINOIS - Overwintering larval survival 28.6 percent in Alexander and Pulaski Counties. (Ill. Ins. Rpt.).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - KANSAS - Statewide samples of wheat plants (3 fields per county) examined by H.W. Somsen, showed average percent infestation by district as follows: Northeast zero, east-central trace, southeast zero, north-central 44, central 65.7, south-central 38.3, northwest 36.7, and west-central 33.1. (Simpson).

PALE WESTERN CUTWORM (Agrotis orthogonia) - COLORADO - Larvae remain in wheat in northeastern area. (Johnson).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - FLORIDA - Nine larvae taken in 100 sweeps of alfalfa at Gainesville, Alachua County, March 18, 1970, by F.W. Mead. Determined by J. Howell. This is a new State record. Additional larvae recovered from same field March 19 and 20. Larval population apparently increasing. (Mead). SOUTH CAROLINA - Statewide in alfalfa; heavy in older stands, light in young seedings. (Thomas). MISSISSIPPI - Larvae averaged 24 per 20 stems of alfalfa in Pontotoc County. (Pitre). ARKANSAS - Egg surveys in northeast area indicate few if any larvae will hatch from eggs laid in fall. (Dumas, Boyer). TEXAS - Widespread and heavy populations caused heavy damage to alfalfa in Wharton County. Controls applied in Falls County. (Smith et al.). CALIFORNIA - Hypera spp. larvae heavy on alfalfa in Pauma Valley, San Diego County. (Cal. Coop. Rpt.). ILLINOIS - H. postica eggs per square foot in untreated alfalfa, by county: Washington 85.9, Jackson 174. (Ill. Ins. Rpt.).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Except for stems, adults destroyed field of alfalfa on Yuma Mesa. Adults 20+ per square foot on ground and on volunteer green alfalfa in adjoining irrigation ditch. (Ariz. Coop. Sur.).

GRASSHOPPERS - NEVADA - Opeia obscura collected at Overton, Clark County, October 23, 1969, on alfalfa by R.C. Bechtel and D.F. Zoller. This is a new State record. Cordillacris occipitalis cinerea collected in Diamond Valley, Eureka County, July 17, 1968, by P.C. Martinelli. This is a new county record. Ageneotettix deorum collected at Horse Creek, Churchill County, July 24, 1968, by R.C. Bechtel and P.C. Martinelli. This is a new county record. All determined by R.C. Bechtel. (Bechtel).

PEA APHID (Acyrtosiphon pisum) - FLORIDA - Increasing, nymphs and adults 800 per 100 sweeps on alfalfa at Gainesville, Alachua County. (Mead). TEXAS - Heavy in alfalfa in Bailey County. (Adams).

TARNISHED PLANT BUG (Lygus lineolaris) - FLORIDA - Light on alfalfa, first nymphs at Gainesville, Alachua County. (Mead).

GREEN CLOVERWORM (Plathypena scabra) - FLORIDA - Larvae 30 per 100 sweeps of alfalfa at Gainesville, Alachua County. (Mead).

POTATOES, TOMATOES, PEPPERS

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Infested commercial tomatoes and some ornamentals in greenhouses in New Castle and Kent Counties. (Burbutis).

COLE CROPS

DIAMONDBACK MOTH (Plutella xylostella) - TEXAS - Locally heavy in 40-acre field of cabbage in Kleberg County. (Triplett, Mar. 13).

GENERAL VEGETABLES

ASPARAGUS BEETLES (Crioceris spp.) - NEVADA - C. duodecimpunctata (spotted asparagus beetle) collected May 9, 1969, by W.H. Arnett and C. asparagi (asparagus beetle) taken May 28, 1969, by C.A. Heringer from asparagus at Fallon, Churchill County. Determined by R.C. Bechtel. These are new State records. C. duodecimpunctata collected on asparagus at Smith, Lyon County, May 26, 1969, and at Schurz, Mineral County, May 13, 1969, by C.A. Heringer. These are new county records. (Bechtel).

A SYMPHYLAN (Scutigerella causeyae) - MISSOURI - Collected by L.R. Hanning at Vichy, Maries County, October 26, 1969. Determined by J.S. Waterhouse. This is a new State record. (Munson).

DECIDUOUS FRUITS AND NUTS

EUROPEAN RED MITE (Panonychus ulmi) - VIRGINIA - Eggs heavy on peaches and apples in Montgomery County. (W.A. Allen).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - Spraying underway in Chelan County pear orchards. Some oviposition occurred on spurs of apples in Yakima County. (Rushmore, Gregorich).

TENT CATERPILLARS (Malacosoma spp.) - ALABAMA - First instars of M. americanum (eastern tent caterpillar) on cherry, apple, and other fruit trees and ornamentals in Lee County March 10. One to 10 percent of trees infested. (McQueen). CALIFORNIA - Egg masses, probably M. disstria (forest tent caterpillar), heavy on apple trees at Rohnerville, Humboldt County. (Cal. Coop. Rpt.).

APPLE APHID (Aphis pomi) - WASHINGTON - Apples generally infested March 17 in upper and lower Yakima Valley, Yakima County. (Gregorich).

CITRUS

CITRUS RED MITE (Panonychus citri) - ARIZONA - Averaged 10+ per leaf in 200 acres of lemons at Yuma, Yuma County; controls underway. Light in 12 additional nurseries at Phoenix, Maricopa County. (Ariz. Coop. Sur.).

SMALL FRUITS

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Larvae heavy in strawberry planting at Bonsall, San Diego County. (Cal. Coop. Rpt.).

ORANGE TORTRIX (Argyrotaenia citrana) - OREGON - Overwintering larvae feeding on cane berries in Multnomah County. (Every).

A GELECHIID MOTH (Symmoca signatella) - CALIFORNIA - Larvae medium in bark of 20-acre grape planting at Manteca, San Joaquin County. (Cal. Coop. Rpt.).

A BILLBUG (Sphenophorus phoeniciensis) - CALIFORNIA - Adults medium in soil in strawberry planting at Redding, Shasta County. (Cal. Coop. Rpt.).

ORNAMENTALS

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - This psyllid and Sabulodes caberata (omnivorous looper) heavy on evergreen pear trees at Fremont, Alameda County. (Cal. Coop. Rpt.).

A PSYLLID (Paurocephala fremontiae) - CALIFORNIA - Nymphs and adults medium on Fremontia sp. at Claremont, Los Angeles County. This is a new county record. (Cal. Coop. Rpt.).

A CONIFER APHID (Cinara tujafilina) - NEVADA - Heavy on arborvitae, large amounts of honeydew attracting honeybees in southern Washoe County. (Hilbig). OKLAHOMA - Continues to increase on arborvitae in Payne County. Many colonies ranged 100-150 individuals. (Okla. Coop. Sur.).

TEXAS LEAF-CUTTING ANT (Atta texana) - TEXAS - Medium to heavy on ornamentals near Alice in Jim Wells County. Control difficult. (Brandes, Mar. 13).

FOREST AND SHADE TREES

A SPIDER MITE (Oligonychus milleri) - CALIFORNIA - Heavy on scattered Pinus halepensis at Glendora, Los Angeles County. (Cal. Coop. Rpt.).

EUROPEAN ELM SCALE (Gossyparia spuria) - CALIFORNIA - Counts of 75+ per twig on evergreen street elms at Poway, San Diego County, and Oak View, Ventura County. This scale could be severe this year unless treated. (Cal. Coop. Rpt.).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - No cases reported in U.S. March 15-21. Total of 51 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico March 8-14 as follows: Sonora 36, Chihuahua 8, Nuevo Leon 1, Tamaulipas 6. Total of 14 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 6,718,000; Mexico 124,590,000. (Anim. Health Div.).

COMMON CATTLE GRUB (Hypoderma lineatum) - TENNESSEE - Larval counts of 3.7 per cow in 16 of 45 head in Giles County. (Edwards et al.). TEXAS - Adults light and running cattle near Brackettville, Kinney County. (Kincaid).

HORN FLY (Haematobia irritans) - OKLAHOMA - Occasional specimens on cattle in Payne County. First of season. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Mainly Haematopinus eurysternus (short-nosed cattle louse) heavy in Hughes and Noble Counties, and moderate in Mayes and Cleveland Counties. (Okla. Coop. Sur.). ARKANSAS - H. eurysternus heavy in Benton County. Second report in State in 15 to 20 years. Linognathus vituli (long-nosed cattle louse) very heavy in Benton County. (Lancaster, Simco).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Many replete females dropping off of deer in Cherokee County. (Okla. Coop. Sur.).

MOSQUITOES - TEXAS - Culex salinarius adults observed indoors and around porch lights as early as February 6. Culiseta inornata adults active during February. (Jefferson County Mosq. Cont. Dist.).

HOUSEHOLDS AND STRUCTURES

SUBTERRANEAN TERMITES (Reticulitermes spp.) - ALABAMA - First winged forms of R. flavipes (eastern subterranean termite) from inside home in Lee County. (McQueen). MARYLAND - R. flavipes swarming continues to annoy homeowners in Prince Georges, Montgomery, Anne Arundel, and Baltimore Counties. (U. Md., Ent. Dept.). NEVADA - R. tibialis alates swarming in home in Reno, Washoe County. (Gustafson).

A POWDER-POST BEETLE (Trogoxylon aequale) - ALABAMA - Collected at Foley, Baldwin County, by G. Wilson, from imported wood carving February 20, 1970. Determined by T.J. Spilman. (McQueen).

BENEFICIAL INSECTS

HONEY BEE (Apis mellifera) - OKLAHOMA - Estimated 20 percent of colonies across State lost due to winter starvation. Mainly due to light nectar flow last fall. (Okla. Coop. Sur.).

SYRPHID FLIES - ALABAMA - Adults and larvae plentiful and feeding on aphids in central areas. (McQueen).

DRAGONFLIES - ALABAMA - First adults of season emerged from lakes and feeding. (McQueen).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - GEORGIA - Specimens collected at Appling, Columbia County, March 10 by W. Waller along Interstate Highway 20. Determined by V.H. Owens, confirmed by D.R. Smith. This is a new county record. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Preliminary releases of sterile moths began March 16 in Coachella Valley; total of 315,000 moths released in first 3 days of operation. (PPD).

SOYBEAN CYST NEMATODE (Heterodera glycines) - NORTH CAROLINA - Collected on farm at Williamston, Martin County, March 12 by W.J. Westcott. Determined by V.H. Owens, confirmed by A.M. Golden. This is a new county record. (PPD).

HAWAII INSECT REPORT

General Vegetables - BEET ARMYWORM (Spodoptera exigua) generally light in green onions at Waiānae, Oahu; moderate in 0.25-acre field, about 20 percent of leaves affected. (Kawamura).

Fruits - Damage by FULLER ROSE WEEVIL (Pantomorus cervinus) moderate to terminal leaves of citrus and avocado trees at Kahului and Omaopio; damage light to gardenia and various citrus at Makawao, Maui. (Hori, Miyahira).

Ornamentals - A SOFT SCALE (Saissetia nigra) moderate on red ginger (Alpinia purpurata) blossoms and on hibiscus hedge at Koloa, Kauai; heavy on hibiscus at Kipahulu, Maui. (Sugawa, Miyahira).

Forest and Shade Trees - A CONIFER APHID (Cinara carolina) nymphs and adults light in 200 acres of slash pine at Kokee, Kauai. Infestations clustered on growing tips and young cones. (Sugawa). Larvae of a NOCTUID MOTH (Melipotis indomita) heavy under bark of kiawe (Prosopis pallida) trees at Napili, Maui. KOA HAOLE LOOPER (Anacamptodes fragilaria) larvae moderate. Trees severely defoliated. (Miyahira).

Beneficial Insects - Adults of a CRYPTOCHETID FLY (Cryptochetum iceryae) emerged from the COTTONY-CUSHION SCALE (Icerya purchasi) which was infesting twigs of ironwood (Casuarina equisetifolia) trees at Hilo, Hawaii, for a new island record. This parasite previously recorded on Oahu, first discovered in July 1966. (Kobayashi). SOUTH AFRICAN EMEX WEEVIL (Apion antiquum) adult damage moderate to emex leaves, larvae heavy on stems in pastureland at Omaopio, Maui. (Miyahira, Kawamura).

Miscellaneous Insects - CROTON CATERPILLAR (Achaea janata) larvae heavy and causing nearly 100 percent defoliation of roadside castorbean (Ricinus communis) plants at Auwahi and Lahaina, Maui. (Tamura, Ah Sam).

DETECTION

New State Records - ALFALFA WEEVIL (Hypera postica) FLORIDA - Alachua County (p. 191). ASPARAGUS BEETLES (Crioceris asparagi and C. duodecimpunctata) NEVADA - Churchill County (p. 192). A GRASSHOPPER (Opeia obscura) NEVADA - Clark County (p. 192). A SYMPHYLAN (Scutigereella causeyae) MISSOURI - Maries County (p. 192).

New County and Island Records - A CRYPTOCHETID FLY (Cryptochetum iceryae) HAWAII - Hawaii (p. 195). GRASSHOPPERS - NEVADA (Cordillacris occipitalis cinerea) Eureka and (Ageneotettix deorum) Churchill (p. 192). IMPORTED FIRE ANT (Solenopsis saevissima richteri) GEORGIA - Columbia (p. 194). A PSYLLID (Paurocephala fremontiae) CALIFORNIA - Los Angeles (p. 193). SOYBEAN CYST NEMATODE (Heterodera glycines) NORTH CAROLINA - Martin (p. 194). SPOTTED ASPARAGUS BEETLE (C. duodecimpunctata) NEVADA - Lyon and Mineral (p. 192).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville, 3/13-19, BL - Armyworm (Pseudaletia unipuncta) 2, black cutworm (Agrotis ipsilon) 1, granulate cutworm (Feltia subterranea) 9, salt-marsh caterpillar (Estigmene acrea) 2. TEXAS - Waco, 3/13-20, BL - Armyworm 46, granulate cutworm 1, variegated cutworm (Peridroma saucia) 52, yellow-striped armyworm (Prodenia ornithogalli) 8.

CORRECTIONS

CEIR 20(12):185 - An ENCYRTID WASP (Ooencyrtus kuwanai) should be An ENCYRTID WASP (Ooencyrtus kuwanai).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1969
(Continued from page 188)

DECIDUOUS FRUITS AND NUTS

Highlights:

CODLING MOTH was the major pest of apples in New Mexico and losses were heavy where control was inadequate. Infestations of ORIENTAL FRUIT MOTH in peaches were reported for the first time in Utah. RED-BANDED LEAF ROLLER infestations in peaches were more serious than for the past 10 years in Virginia. WESTERN PEACH TREE BORER was severe on peach, prune, and cherry in a few local areas of California, and will require controls on cherries in Montana in 1970. LESSER PEACH TREE BORER is rapidly becoming a problem in the cherry growing area of northern Michigan. PEACH TREE BORER and lesser peach tree borer were the most destructive pests of peach, plum, and cherry throughout Alabama. SAN JOSE SCALE increased on fruits and nuts in California, and was the most important scale insect on peach, apple, plum, and pear in Alabama. PEAR PSYLLA was unusually abundant in commercial pears in the Willamette Valley of Oregon, was reported for the first time in Utah, and infestations were above average in Connecticut and Rhode Island. PEAR-SLUG was unusually abundant in California, and populations were much heavier than in 1968 in Oregon. NAVEL ORANGEWORM was severe on almond and walnut in California. PECAN NUT CASEBEARER was heavy in areas of Oklahoma and reported for the first in Pennsylvania. HICKORY SHUCKWORM was the major insect pest of pecans throughout Alabama.

CODLING MOTH (Laspeyresia pomonella) was very prevalent on fruit and nut crops in CALIFORNIA. Populations were very low in OREGON. Less than one percent of the fruit in Hood River and Wasco Counties showed evidence of "stings" or larvae at harvest. Codling moth was normal in WASHINGTON. Proper controls kept damage minimal. First adults of the season were taken in sex lure traps May 4 at Buena, Yakima County, and May 6 in the upper Yakima Valley which was 8 days earlier than in 1968. The first larval entry was noted in pear May 21, four days earlier than in 1968. Second-generation adults peaked July 21. Third-generation larvae were first found on August 27. The first codling moth injury of the season in IDAHO occurred May 29 in 1-inch apples at Fruitland, Payette County. As in previous years, this pest was common to abundant in backyard apple trees, or in abandoned or neglected orchards statewide. Codling moth populations in apples and damage to pears were about normal in UTAH. Adults ranged 4-130 per trap on the Western Slope in COLORADO by June 10. The second-generation began appearing in peaches and apples about June 25 in Delta and Montrose Counties. Populations had declined by September 24. Codling moth was the major pest of apples throughout NEW MEXICO. Losses were heavy where control was inadequate.

Codling moth blacklight trap catches in WISCONSIN were light throughout the summer except for a small peak of up to 9 moths on August 15. Controls kept damage light. In MICHIGAN, variable early season weather split the first generation, resulting in an overlapping of larval generations the rest of the season. No economically damaging infestations were found. Sprays prevented development of infestations on apples in the Piedmont area of VIRGINIA. In MARYLAND, codling moth populations were light and sprays prevented crop losses. Damage by this pest was insignificant in NEW JERSEY in well-sprayed commercial orchards, but was very noticeable in abandoned blocks and in backyard trees.

ORIENTAL FRUIT MOTH (Grapholitha molesta) adults were not taken in regularly tended bait pots in orchards which were infested in 1968 at Medford, Jackson County, OREGON. In COLORADO, adults peaked, up to 90 per 5 traps, by early June. The second generation peaked at 100 per 5 traps by July 20. Counts were still high in early August, but declined by September 4. Larval infestations were found for the first time in UTAH in peach orchards in Utah County in August. Oriental peach moth populations in VIRGINIA were lower than during the past several years. Injury to fruit was minor. Twig infestations ranged light to

moderate early in the season. In NEW JERSEY, injury by this olethreutid was very light in commercial blocks and then only on poorly sprayed trees. Counts were typically abundant in backyard stone-fruit trees. Oriental fruit moth larvae were more common than usual in peaches in CONNECTICUT. This pest caused much damage to peach where trees had not been sprayed by July 16 in Providence County, RHODE ISLAND.

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) second-generation larvae in VIRGINIA caused 10-12 percent injury in several peach orchards in July. Infestations were more serious than in the past 10 years. The third generation injured 30-50 percent of the apples in 2 orchards in the Piedmont region in September. The population has been increasing each year for the past several years. In northern Virginia, populations were as low as they have been for the past several years. Injury in NEW JERSEY was insignificant in well-sprayed commercial orchards, but was very noticeable in abandoned blocks and in backyard trees.

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) was damaging in a few locations in CALIFORNIA, particularly in the northern area. Infestations were about normal in UTAH. Injury in NEW JERSEY was insignificant in well-sprayed commercial orchards but very noticeable in abandoned blocks and backyard trees.

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) was severe in a few local areas of CALIFORNIA, on peach, prune, and cherry. PEACH TREE BORER (Sanninoidea exitiosa) populations in UTAH were about normal on peaches. Damage was common to plums and prunes. In MONTANA, S. exitiosa infested cherry trees at Flathead, Lake County. Not much control work was done, but growers will need to implement controls in 1970. LESSER PEACH TREE BORER (Synanthedon pictipes) is rapidly becoming a problem in the cherry belt, especially in tart cherries, in northern MICHIGAN. Peach tree borer and lesser peach tree borer were the most destructive pests of peach, plum, and cherry trees throughout ALABAMA, and were extremely destructive to peach in FLORIDA. S. pictipes was light throughout MARYLAND. Populations of S. exitiosa in NEW JERSEY were similar to those of past years. Injury occurred in many commercial blocks due to improper timing and poor spray coverage. Much injury occurred in home plantings. S. pictipes populations and injury ranged light to moderate throughout NEW JERSEY.

PEACH TWIG BORER (Anarsia lineatella) larval survival was about 2 percent, normally 70 percent, in the Yakima Valley of WASHINGTON. In OREGON, larvae infested 5-10 percent of the terminals in orchards near Yamhill and McMinnville, Yamhill County. Fewer larvae were found in Italian prune orchards. Peach twig borer larvae were more serious than usual on peaches in UTAH. This pest also infested plum and pear in the State. Larvae ranged light to moderate on the Western Slope of COLORADO. Damage and loss were light. Most damage occurred where only 1 or 2 sprays were applied.

Infestations of a PYRALID MOTH (Acrobasis tricolorella) in MICHIGAN are limited mostly to cherry orchards in Oceana County, although the pest does occur as far north as Traverse City in Grand Traverse County. The situation was less acute and costly than formerly but did warrant continued attention. Localized larval infestations of a NOCTUID MOTH (Abragrotis alternata) seriously damaged blossoms, buds, and new growth of apple, plum, and peach in some southwest areas of MICHIGAN. GREEN FRUITWORM (Lithophane antennata) populations in the Piedmont and northern areas of VIRGINIA were lower than normal, but injury was light in many apple orchards at petal fall.

PLUM CURCULIO (Conotrachelus nenuphar) heavily damaged plum and peach in a few north-central, south-central, and southeast counties of OKLAHOMA from late May to mid-July. Found statewide in ALABAMA, it was the most serious pest to fruit of peach, plum, and apple. Control in MICHIGAN was readily obtained on apple, plum, and peach. With no second generation in VIRGINIA, no peach injury occurred. Twig infestations ranged light to moderate in early season. Injury in NEW JERSEY was insignificant in well-sprayed, commercial orchards, but was very noticeable in abandoned blocks and backyard trees.

SAN JOSE SCALE (Aspidiotus perniciosus) increased in occurrence and importance in CALIFORNIA. In UTAH it damaged many apple orchards and infested several Salt Lake and Utah County pear orchards. Infestations in IDAHO were present in many Canyon and Payette County orchards during early spring. Larvae scarred about half of the fruit surface of apricots on several unsprayed trees at Riggins, Idaho County. In MONTANA, San Jose scale was not found outside of Plains in Sanders County until 1969. One orchard of about 20 trees was lightly infested near Paradise, 6 miles from Plains. Plains is the only area in Montana where this scale insect has been established for more than 2 years. San Jose scale remained the most important scale insect affecting peach, apple, plum, and pear in central and north ALABAMA.

WHITE PEACH SCALE (Pseudaulacaspis pentagona) has become the more important scale on peach and plum and several other nonfruit hosts in south and central ALABAMA. It caused less damage to peaches in FLORIDA in 1969 than in previous years.

PEAR PSYLLA (Psylla pyricola) was unusually abundant in commercial pear orchards in the Willamette Valley of OREGON. It was particularly troublesome where chlorinated hydrocarbon sprays were not applied during the dormant season. Adult survival in WASHINGTON was high despite severe winter temperatures in the Yakima Valley. Survival ranged 20-50 percent in the north-central area. Snow hampered early control programs. Egg laying began in most areas of Payette County, IDAHO, during the week ending March 21. Pear psylla was a new State record in UTAH. It damaged a few pear orchards in September and October at Ogden, Weber County. In MICHIGAN the number of orchards with heavy buildups increased as resistance to an organic phosphate and a carbamate spread. Weather prevented prebloom control with a chlorinated hydrocarbon-oil combination in numerous instances. Pear psylla infestations were severe in all unsprayed trees in PENNSYLVANIA. Most garden pears were completely defoliated and blackened by sooty fungus by early August. Controls were difficult in commercial groves. Pear psylla was typically abundant and troublesome on backyard pear trees throughout NEW JERSEY. Numbers in CONNECTICUT were above average on pears. Pear psylla infested many pear trees throughout RHODE ISLAND by July 11, and complaints were more numerous than in 1968. There were many reports of inadequate controls. A heavy, isolated infestation was found in Washington County August 5.

WHITE APPLE LEAFHOPPER (Typhlocyba pomaria) outbreaks on plum and apple in MICHIGAN were scattered in Berrien and Van Buren Counties in late August and September. The cause was probably inadequate first-generation control from petal fall to second cover in the southwest area. An outbreak occurred in the southern half of PENNSYLVANIA. Other than a few minor adjustments in the spray programs, no problems resulted. This was the first outbreak of this species in the fruit belt of this State in over 20 years. In MARYLAND, yellowing was moderate to heavy on apple foliage in 3 orchards at Hagerstown and Smithsburg, Washington County.

Adult movement of unspecified CICADAS from range foothill lands into orchards was heavy in the Alpine area of Utah County, UTAH, in June. Oviposition caused conspicuous damage to about 1,000 acres of orchards in the area. Some controls were applied.

ROSY APPLE APHID (Dysaphis plantaginea) was often above normal to sometimes conspicuously abundant on apples in UTAH. Rosy apple aphid caused damage on the Western Slope of COLORADO where controls were inadequate. Fruit damage was light to moderate where proper controls were used. Unseasonably cool, wet weather through June favored increased and prolonged infestations in MICHIGAN. Feeding lasted longer than in most years. Prominent on apples in northern VIRGINIA, rosy apple aphid caused more damage than usual in Frederick, Clarke, Warren, and Shenandoah Counties. Populations were light in most areas of MARYLAND. Damage was heavy in 2 orchards in Harford and Queen Annes Counties. Numbers were light in most NEW JERSEY areas; injury was insignificant.

APPLE APHID (Aphis pomi) was often above normal on UTAH apples. Unseasonably cool, wet weather into June favored increased and prolonged infestations in MICHIGAN. Feeding lasted longer than in most years. Normal numbers on VIRGINIA apples were easily controlled in Frederick, Clarke, Warren, and Shenandoah Counties. Apple aphid was light in most areas of NEW JERSEY and injury was insignificant. This aphid was a problem in localized areas of CONNECTICUT.

BLACK CHERRY APHID (Myzus cerasi) was serious in many cherry orchards in north and central UTAH. GREEN PEACH APHID (M. persicae) was normal to below normal on peaches in UTAH. M. persicae caused damage on the Western Slope of COLORADO where improper controls were used. Damage was light to moderate on fruit where proper controls were used. M. persicae lightly infested most peach orchards in VIRGINIA; no serious injury resulted. Populations were more prevalent than for 20 years. M. persicae in NEW JERSEY was typically abundant without noticeable injury on stone fruits in the spring.

An APHID (Anuraphis helichrysi), MEALY PLUM APHID (Hyalopterus pruni), and RUSTY PLUM APHID (Hysteroneura setariae) were often numerous on plums and prunes during spring and sometimes during fall in UTAH. WOOLLY APPLE APHID (Eriosoma lanigerum) was often above normal to sometimes conspicuously abundant on apples in UTAH.

WESTERN BROWN STINK BUG (Euschistus impictiventris) was heavy on deciduous fruit trees in the Salt River Valley in ARIZONA in late February. Heavy populations of TARNISHED PLANT BUG (Lygus lineolaris) were present during the bloom period and injured 14 percent of the peach fruit in VIRGINIA.

APPLE MAGGOT (Rhagoletis pomonella) catches were generally low in WISCONSIN, but a few large catches occurred erratically at different sites and at different times. Controls in commercial orchards kept damage light. Populations in MICHIGAN peaked about August 4. Fly activity threatened fruit quality until September 20. Crop damage was not extensive. Apple maggot injury in NEW JERSEY was insignificant in well-sprayed, commercial orchards, but very noticeable in abandoned blocks and backyard trees. Damage in RHODE ISLAND was moderate to apples in a home orchard on August 18. Unsprayed orchards were most heavily damaged.

CHERRY FRUIT FLY (Rhagoletis indifferens) adults first emerged in OREGON May 14 at The Dalles, Wasco County, and May 25 in Marion County. R. indifferens adults in IDAHO were first trapped May 19 at Weiser, Washington County. R. indifferens was a threat at Flathead Lake, Lake County, MONTANA. Controls were applied although the cherry crop was light. CHERRY FRUIT FLY (R. cingulata) and BLACK CHERRY FRUIT FLY (R. fausta) first emerged in quantity on June 25 in MICHIGAN. From then till harvest, fly activity demanded carefully timed spray applications to preclude egg laying.

PEAR-SLUG (Caliroa cerasi) was unusually abundant in CALIFORNIA. Counts in OREGON were much higher than in 1968, particularly on cherry trees in Marion and Clackamas Counties. In IDAHO it severely skeletonized leaves of cherries and hawthorn at Orofino, Clearwater County, in June. Damage by pear-slug in UTAH was moderate to pear but light to plum and prune. Injury was conspicuous in Emery, Washington, Kane, Weber, Davis, Utah, and Salt Lake Counties. In PENNSYLVANIA, pear-slug had defoliated up to 50 percent of unsprayed home orchard trees by July in Susquehanna and Clearfield Counties.

EUROPEAN RED MITE (Panonychus ulmi) was locally heavy on prune and apple in CALIFORNIA. Overwintering eggs in IDAHO were fewer in most orchards during 1969 than in preceeding years. Damage in UTAH was greater than normal in some Utah County orchards. In MICHIGAN below normal temperatures and excessive rain from April through June effectively checked critical buildups of European red mite until late July. Many growers did not need to use summer miticides.

Overwintered eggs of European red mite in VIRGINIA were extremely heavy in many peach orchards, but heavy summer rains prevented buildup to injurious populations. The Piedmont area had the lightest population in 15 years, due to heavy summer rains. In northern Virginia, infestations were spotty but easily controlled. European red mite populations throughout PENNSYLVANIA were comparatively low in most orchards. Injury was the least that has occurred in over 10 years. Populations in NEW JERSEY were light to moderate in most apple orchards except in late August and September when populations increased sharply and leaf bronzing was common. Damage was minor and spotty. Wet conditions helped to check build-ups in early and midsummer. Low numbers on peaches and pears caused very little injury. European red mite was a problem in localized areas of CONNECTICUT. Overwintered eggs in RHODE ISLAND ranged up to 250 per spur of apple April 13 at Kingston, Washington County. Dormant oil sprays and routine control reduced the threat to acceptable levels.

SPIDER MITES (Tetranychus spp.) laid eggs in the Hood River Valley of Hood River County, OREGON, during the week of April 11, about 2 weeks later than in 1968. The integrated control program in Jackson County pear orchards using Typhlodromus spp. (phytoseiid mites) appears effective so far. One orchardist estimated a savings of \$3,000 in a 120-acre orchard where predator mites were heavy. TWO-SPOTTED SPIDER MITE (T. urticae) was a general pest of most fruit trees in CALIFORNIA. T. mcdanieli was damaging in Washington County orchards and commonly serious throughout UTAH. T. mcdanieli tended to be replaced by T. urticae. It often damaged pears. Spider mites damaged foliage in untreated and improperly treated apple orchards throughout NEW MEXICO. T. urticae was damaging on the Western Slope of COLORADO where improper controls were used. Fruit damage ranged light to moderate where proper controls were used. In MICHIGAN an almost constant 10-day heavy rain before June 15 drove Tetranychus sp. off of orchard-floor vegetation and into fruit trees. This spider mite became a concern 3-4 weeks ahead of schedule, and outnumbered EUROPEAN RED MITE (Panonychus ulmi) in many orchards throughout July. T. urticae was generally light in most apple orchards in NEW JERSEY until September when heavy populations were noted in several Camden County blocks. Very little injury occurred.

PEACH SILVER MITE (Aculus cornutus) winter survival was about one percent in Chelan County, WASHINGTON, where it is usually about 60 percent. APPLE RUST MITE (A. schlechtendali) was light in Salt Lake and Utah Counties, UTAH. PEAR LEAF BLISTER MITE (Eriophyes pyri) caused normal injury to pears in UTAH.

NAVEL ORANGEWORM (Paramyelois transitella) continued to be a severe pest of almonds and walnuts in CALIFORNIA. PECAN NUT CASEBEARER (Acrobasis caryae) infested pecans in most areas of TEXAS in late April and May. In OKLAHOMA, A. caryae was heavy and scattered in the southwest, south-central, and northeast areas in June and early July. The first and second generations of A. caryae caused some pecan losses in central and south ALABAMA. In FLORIDA the first generation of A. caryae was severe on pecans; the second-generation was light. PECAN LEAF CASEBEARER (A. juglandis) on English walnut in Lycoming County, PENNSYLVANIA, was reported as a new State record. Mercer County was a new county record.

HICKORY SHUCKWORM (Laspeyresia caryana) was heavy in harvested pecans in Hardeman and Bosque Counties, TEXAS, early in January, light to moderate in Glasscock County in September, and heavy in Dallas County in October. It was moderate to heavy in northeast and south-central OKLAHOMA in late September and October. In ALABAMA, hickory shuckworm was still the major insect pest of pecans throughout the State. Serious losses of nuts and quality occurred. Populations in FLORIDA ranged from heavy in untreated pecans to light in properly sprayed orchards.

WALNUT CATERPILLAR (Datana integerrima) damaged pecan and walnut trees in north-central and northeast OKLAHOMA in September. From mid-July until late August, larvae defoliated 30-50 percent of about 75 percent of all walnut trees along roadsides in north-central, central, south-central, west, and southwest OHIO. Walnut caterpillar larvae completely defoliated a few walnut trees in Monongalia, Hampshire, and Jefferson Counties, WEST VIRGINIA, for the third consecutive year.

FALL WEBWORM (Hyphantria cunea) was moderate on pecans in Val Verde, Milam, and many northern Blackland counties of TEXAS in late August, light throughout the east area in September, and heaviest in Limestone County in late September. Larvae were especially heavy in south-central OKLAHOMA on pecans.

OMNIVOROUS LEAF TIER (Cnephasia longana) was unusually heavy during spring in the Willamette Valley of OREGON. Larvae damaged filbert orchards. Counts appear to have been much higher than in the last few years, especially in Marion and Washington Counties. In IDAHO, larvae infested flowering chestnuts at Boise, Ada County, early in July.

PECAN WEEVIL (Curculio caryae) was light to moderate in Glasscock County and light to heavy in north-central counties in TEXAS. Pecan weevil was heavy in scattered areas by late August. Counts were moderate to heavy in most pecan areas in September and October. This weevil has become more widespread and damaging in ALABAMA. Infestations were about the same as in 1968 in central and south areas. Pecan weevil was extremely active on pecans from August to October in FLORIDA.

WALNUT HUSK FLY (Rhagoletis completa) was generally heavy in most locations of CALIFORNIA. Treatment timing is now effective. In OREGON, Columbia and Lane Counties were reported as new county records. Adults at Medford, Jackson County, were heavier than in previous years. Larvae infested all nuts on some trees. The primary economic damage was centered around Roseburg, Douglas County. Larvae in IDAHO infested black and English walnuts at Wilder, Canyon County. Fully grown larvae infested up to 40 percent of the nuts from trees at Homedale, Owyhee County. Walnut husk fly infestations in UTAH were light to moderate in English walnuts and generally lighter in black walnuts from Payson, Utah County, northward.

WALNUT APHID (Chromaphis juglandicola) was light to heavy on English walnuts in UTAH. Black walnut trees were often sticky from honeydew in central and north areas. FILBERT APHID (Myzocallis coryli) was very numerous during spring at Logan, Cache County, and in Davis and Salt Lake Counties, UTAH. BLACK PECAN APHID (Myzocallis caryaefoliae), BLACK-MARGINED APHID (Monellia costalis), and Monelliopsis nigropunctata were serious on pecans in south and central ALABAMA. Generally, these species were less important than in 1968.

A FRUIT-TREE MITE (Bryobia rubrioculus) damaged almonds in many local areas of CALIFORNIA. PECAN LEAFROLL MITE (Aceria caryae) was heavier and more widespread than usual in several north-central, northeast, and east-central counties of OKLAHOMA.

CITRUS

Highlights:

CITRUS WHITEFLY populations in Florida were nearly at an 18-year high, and SPIREA APHID and BLACK SCALE peak populations were the highest on record in 18 years. CITRUS FLAT MITE was heavy in some citrus groves in Arizona. SPIDER MITES were a problem on citrus in California and Arizona. CITRUS RUST MITE was the highest on record in 18 years in Florida.

CITRUS WHITEFLY (Dialeurodes citri) was at the normal low level until May and June in FLORIDA when it nearly reached the 18-year high. It was in the high range in July and early August, then decreased until late September when the high level was again reached. At the July peak, 72 percent of the groves were infested and 9 percent had heavy infestations. In October, citrus whitefly remained in the high range, the highest on record for October, and nearly equaled the record for any month in the past 18 years. Infestations decreased in November but were still above normal and the highest on record for November.

SPIREA APHID (Aphis spiraecola) was scarce through February in FLORIDA citrus. Infestations increased rapidly to above normal levels through March and April, with the late April peak higher than at any time in 18 years of observations.

BLACK SCALE (Saissetia oleae) populations were below normal until mid-May in FLORIDA and then rapidly increased to normal by late June. Infestations were moderate to heavy in 59 percent of the groves. During the summer this was the only scale on citrus that attained a high level and exceeded normal abundance. Black scale reached a peak in mid-July, then slowly decreased. Population levels remained comparatively high for this scale, with October and November counts the highest in 18 years of record for each of these months.

YELLOW SCALE (Aonidiella citrina) increased on citrus from Tulare County, CALIFORNIA, north. CALIFORNIA RED SCALE (Aonidiella aurantii) was unusually abundant and destructive in CALIFORNIA. Parasite and predator balance was still upset. Populations of an ARMORED SCALE (Unaspis citri) were low throughout FLORIDA. Infestations were heavy in some areas and an important problem.

MEALYBUGS were extremely low in FLORIDA through late April but by late June were abnormally high. Mealybugs were above normal through August. Counts were the highest on record in October and nearly equaled the record for any month for the past 18 years. Populations decreased in November but still were above normal and the highest on record for the month.

CITRUS FLAT MITE (Brevipalpus lewisi) was heavy in many Yuma County, ARIZONA, groves during February, March, June, July, and August. Counts were moderate in some widely scattered areas of Maricopa County during October. Controls were generally successful.

A SPIDER MITE (Eotetranychus lewisi) was more prevalent on citrus this year in several scattered locations in CALIFORNIA, and CITRUS RED MITE (Panonychus citri) was still a severe pest of citrus in most areas of State. Heavy populations of citrus red mite infested lemon trees from February through May in ARIZONA. Counts were light during the summer. A buildup occurred in October. This pest was controlled by heavy November rains in most groves.

CITRUS RUST MITE (Phyllocoptruta oleivora) populations were above normal nearly all year on FLORIDA citrus. The highest counts in 18 years were noted for May and July. Populations were very high all summer. In untreated groves during late July, 42 percent of the fruits were infested and 62 percent of the groves harbored heavy infestations. CITRUS BUD MITE (Aceria sheldoni) infestations continued on citrus in Santa Barbara and Ventura Counties, CALIFORNIA.

NAVEL ORANGEWORM (Paramyelois transitella) was very abundant in northern CALIFORNIA navel oranges in dooryard and commercial orchards. BEET ARMYWORM (Spodoptera exigua) larvae damaged young citrus seedlings in June and September in some nurseries in Yuma County, ARIZONA. Controls were needed.

WESTERN FLOWER THRIPS (Frankliniella occidentalis) was damaging to tangerines in the desert areas of CALIFORNIA. CITRUS THRIPS (Scirtothrips citri) was severe in many locations of California. Citrus thrips was most troublesome in Yuma County, ARIZONA. Controls began in mid-February, continued into March, and began again in mid-April. A second buildup occurred in June at Yuma and additional hatches con-

tinued into August. Nurseries were sprayed continually. During October a fall buildup began but died out when natural conditions reduced populations. The groves in the Salt River Valley did not have so heavy a buildup. Counts were moderate in groves during mid-April.

OTHER TROPICAL AND SUBTROPICAL FRUIT

FIG PSYLLID (Homotoma ficus) was heavy on figs at Concord, Contra Costa County, CALIFORNIA, and was found later in Solano County in low numbers. This was reported as a new record for North America. For background information on this psyllid see CEIR 19(31):611.

OLIVE SCALE (Parlatoria oleae) was prevalent on olives in Tulare County, CALIFORNIA, during the 1969 season.

SMALL FRUITS

STRAWBERRY CROWN BORER (Tylocleris fragariae) damaged some strawberries in UTAH. STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus), BLACK VINE WEEVIL (B. sulcatus) and B. rugosostriatus damaged home plantings and older strawberry patches in UTAH. Small patches of strawberries were damaged by Brachyrhinus spp. and Peritelinus oregonus in June at Stevenson, Skamania County, WASHINGTON.

A SAP BEETLE (Glischrochilus quadrisignatus) was tunneling into strawberries and destroying the crop at Saint Anthony, Fremont County, IDAHO, during August. The strawberry harvest was 90-95 percent completed in MICHIGAN, before meaningful migrations of another SAP BEETLE (Stelidota geminata) into plantings began. GRAPE FLEA BEETLE (Altica chalybea) was numerous on grape leaves in the east-central and central districts of INDIANA.

BRAMBLEBERRY LEAFHOPPER (Macropsis fuscula) infestations were light on wild Rubus and commercial raspberries in Whatcom and Pierce Counties, WASHINGTON. Whatcom County was the first new county record since this leafhopper was reported in the United States in July 1968. Adults of a LEAFHOPPER (Erythroneura elegantula) ranged over 100 per sweep on European grapes in mid-September at Hermiston, Umatilla County, OREGON. Foliage was mottled a light yellow green and some were brown and shriveled. No fruit damage was evident. Erythroneura spp. were widespread and increasing in CALIFORNIA. VIRGINIA-CREEPER LEAFHOPPER (E. ziczac) and E. comes discolored susceptible grape varieties in several areas of UTAH.

GRAPE PHYLLOXERA (Phylloxera vitifoliae) was found on roots of European grapes in Douglas, Jackson, Josephine, and Wasco Counties, OREGON. These were the first collections in the State. MEADOW SPITTLEBUG (Philaenus spumarius) infested strawberries in the southeast, east-central, and eastern edges of the central and south-central districts of MINNESOTA.

GRAPE BERRY MOTH (Paralobesia viteana) was damaging in some vineyards in Washington County, UTAH, and STRAWBERRY LEAF ROLLER (Ancylicomptana fragariae) was common in the spring on strawberries in the northern part of the State. P. viteana was moderate but late in MICHIGAN. Damage to vineyards was minimal due to correct timing of controls.

RASPBERRY CROWN BORER (Bembecia marginata) larvae infested most of the older canes in a boysenberry planting April 17 at Caldwell, Canyon County, IDAHO. OMNIVOROUS LEAF TIER (Cnephasia longana) was observed damaging cranberries and strawberries in the spring in the Willamette Valley of OREGON. Populations were much heavier than in the last few years, especially in Marion and Washington Counties. Additional sprays were applied to some strawberry fields for satisfactory control. WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) was injurious in some vineyards in Washington County, UTAH.

SPIDER MITES were generally moderate and below normal on raspberries in some localities of UTAH. They were damaging in Emery, San Juan, Davis, Sevier, Rich, Utah, and Cache Counties. Spider mites, mostly TWO-SPOTTED SPIDER MITE (Tetranychus urticae), are becoming difficult to control in some strawberry fields in MINNESOTA, due to increased resistance to acceptable miticides. BLUEBERRY BUD MITE (Aceria vaccinii) infested blueberry at Melrose, Alachua County, FLORIDA, for a new State record.

First nymphs of STRAWBERRY APHID (Chaetosiphon fragaefolii) were observed on strawberry plants May 6 at Vancouver, Clark County, WASHINGTON. Infestations were lighter than normal at this time. Populations averaged 71 per strawberry leaf by August 25, which was higher than normal.

GARDEN SYMPHYLAN (Scutigera immaculata) infested ripe strawberries at Vancouver, Clark County, WASHINGTON, and was a potential contaminant of processed strawberries.

Weather of the week continued from page 190.

TEMPERATURE: Temperatures averaged slightly above normal along the Pacific coast, the Canadian border, and the Florida Peninsula and below normal over most of the rest of the Nation. Much of the West had enjoyed 8 consecutive weeks of mild temperatures before the arrival of last week's cold weather. Much of the central Rocky Mountain area and the central and southern Great Plains averaged 6° to 12° colder than normal. Record-breaking cold occurred in the Southeast early in the week. Subfreezing temperatures occurred in the northern Florida Peninsula Monday morning. On Tuesday morning, subfreezing weather occurred as far south as central Georgia in the East and to the Rio Grande in western Texas. Subzero temperatures were recorded at Grand Forks, North Dakota, and at Alamosa, Colorado, Wednesday morning. Afternoon temperatures in the West ranged generally from the 30's and 40's in the northern States to the 60's and 70's along our southern border except in the deep-snow area of Kansas and nearby parts of neighboring States which remained below freezing for several days. A warming over the Central and East occurred in the latter part of the week. Maximums reached the 50's in the central Great Plains and minimums remained above freezing in the Ohio River Valley. The warmer weather melted much of the snow cover. (Summary supplied by Environmental Data Service, ESSA.)

Origin and Distribution of Daylily Thrips, Frankliniella hemerocallis

Crawford (Thysanoptera : Thripidae)

A male of Frankliniella hemerocallis Crawford (1948, Wash. Ent. Soc. Proc. 50(4):83-84) was intercepted on Hemerocallis sp. plants from Japan (S.F. 398, IIPIRB 69-23972) by Plant Quarantine Inspector R. Wion on October 23, 1969. This is the first oriental record of the daylily thrips. As this thrips is highly specific on Hemerocallis species and these are native to Asia or Eurasia, we concluded that it is also oriental in origin. We previously believed that it was native to North America because of its similarity to the native North American tobacco thrips, F. fusca (Hinds), and its occurrence within the range of F. fusca. The range of F. fusca includes North America east of the 100th parallel. Locality records for F. hemerocallis are Geneva, Wisconsin; Gainesville, Florida; Beltsville and Glendale, Maryland; and New York, New York.

The two species are easily separated by the absence in F. hemerocallis and the presence in F. fusca of a pair of pores on the disc of the metanotum. Dark areas of the legs are extensive and concolorous with the body in F. hemerocallis and scant and much lighter than the body in F. fusca.

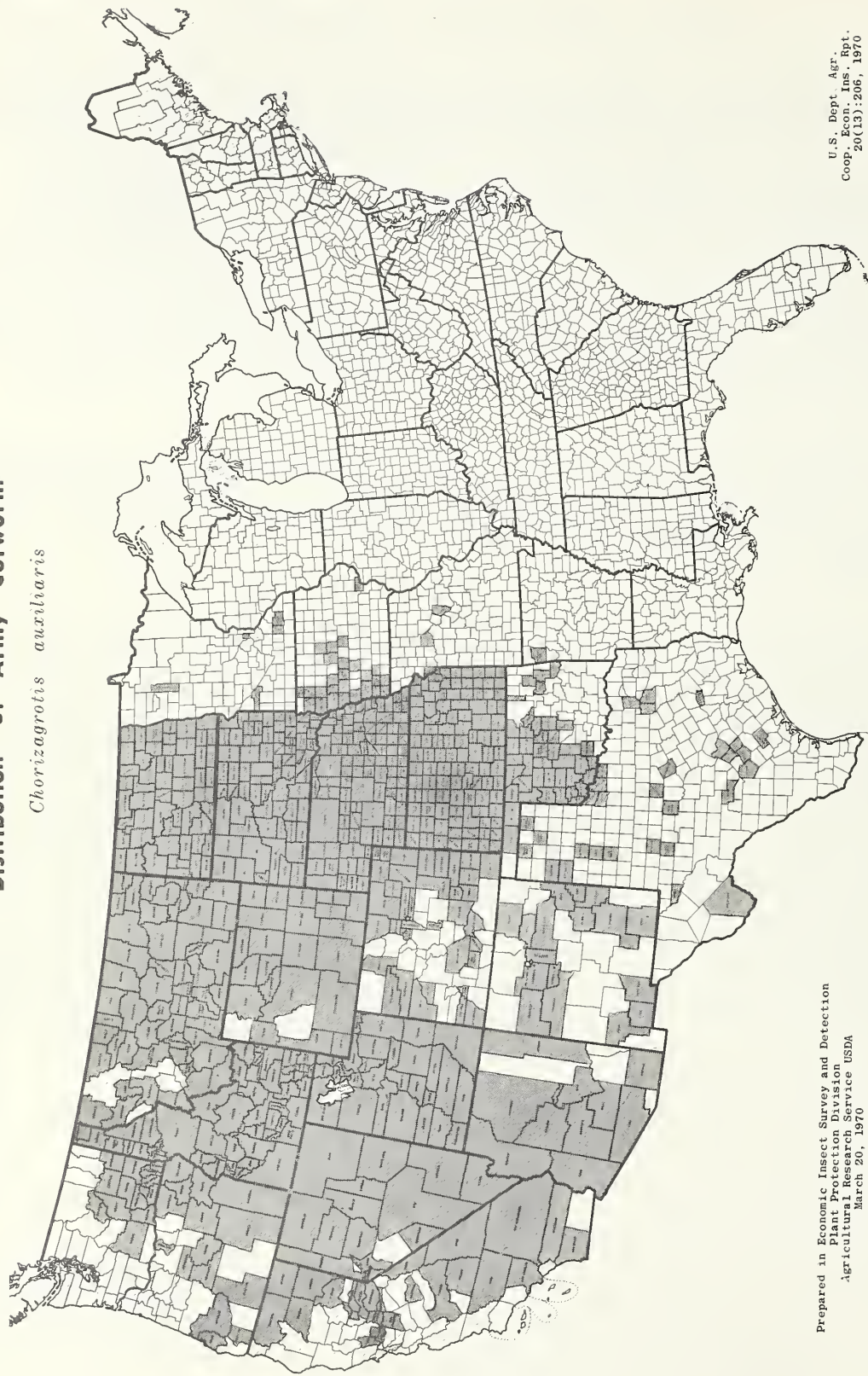
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Distribution of Army Cutworm

Chorizagrotis auxiliaris



Prepared in Economic Insect Survey and Detection
Plant Protection Division
Agricultural Research Service USDA
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SURVEY METHODS

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Part XXVII

Additional copies of Parts I through XXVII of this bibliography are available from Economic Insect Survey and Detection.

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