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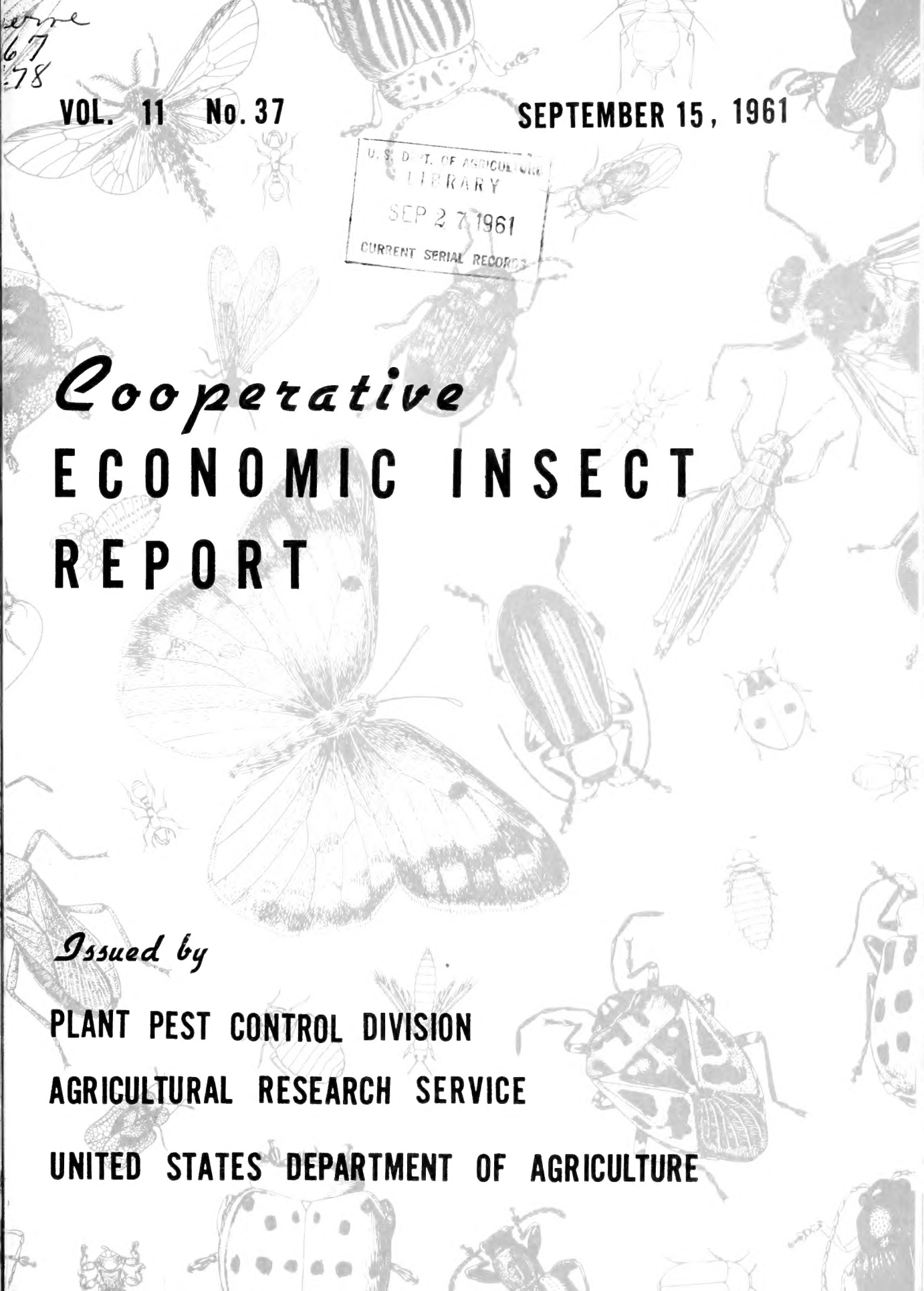
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Cooperative
**ECONOMIC INSECT
REPORT**

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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Survey and Detection Operations
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United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

CORN EARWORM locally heavy on soybeans in 4 South Carolina counties; infested soybeans required treatments in Charles City County, Virginia; and damaged soybeans and peanuts reported in several Alabama counties. (p. 862). NORTHERN CORN ROOTWORM adults extremely abundant and severely damaged silks of corn in Fulton and Sandusky Counties, Ohio, during past several weeks; considerable loss expected in many fields of late corn. SOUTHERN CORN ROOTWORM injury to peanut crop approaches total destruction in many areas of Virginia. (p. 862). CORN ROOTWORM adult feeding on corn ears continues in Nebraska and South Dakota. SPOTTED ALFALFA APHID causing severe damage to alfalfa in Canyon County, Idaho; reduction of crop expected. (p. 863). A CICADA (Diceroprocta apache) adults heavy and damaging 20-25 percent of alfalfa stems by egg deposition in areas of Yuma County, Arizona. (p. 864).

Additional MEXICAN BEAN BEETLE infestations found in Kansas on beans. (p. 867).

EUROPEAN PINE SHOOT MOTH reported established in Sedgwick and Leavenworth Counties, Kansas. MIMOSA WEBWORM caused severe damage to honeylocust and mimosa in central and southern Maryland and infestation general in mimosa trees in Evansville area of Indiana. (p. 870),

Aerial despersals of sterile SCREW-WORM adults continues in a 5-county area near Bonifay, Florida; no positive cases found since June 27. (p. 872).

New WHITE-FRINGED BEETLE infestations found in Greene, Mississippi and St. Francis Counties, Arkansas. (p. 873).

CORRECTIONS (p. 874).

Outlook for FOREST INSECT activity in California, fall and winter of 1961-62, reported. Losses from bark beetles expected to be generally light in north coast area, moderate in northeastern portion of State, heavy in central and southern Sierra and very heavy in southern California. (pp. 876, 877).

Change of generic name for FIELD CRICKETS. (p. 877).

INTERCEPTIONS of special interest at U. S. ports of entry. (p. 878).

INSECTS not known to occur in the United States. (pp. 879-882).

INSECT DETECTION: New state records reported were European pine shoot moth in Kansas (p. 870) and a leaf beetle (Chlamisus comptoniae) in Pennsylvania (p. 871). New county records reported were European corn borer in Chambers County, Alabama (p. 861); Mexican bean beetle in Leavenworth and Johnson Counties, Kansas (p. 867); and face fly in Bennett, Douglas, McCook and Washabaugh Counties, South Dakota (p. 872).

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

WEATHER OF THE WEEK ENDING SEPTEMBER 11

Hurricane Carla, with sustained winds exceeding 100 m.p.h., near the center and of hurricane speed (74 m.p.h., and over) outward for 100 miles, lashed the Texas coast for many hours. The eye of the storm crossed the coast in the Matagorda Bay area between Corpus Christi and Galveston during the afternoon of September 11. Carla's approach was preceded by the mass evacuation of an estimated 300,000 persons from danger zones along the coasts of Texas and Louisiana. This well-executed exodus has held loss of life to a minimum in this very extensive and severe hurricane.

The hurricane spawned a number of tornadoes which resulted in the loss of at least one life, numerous injuries, and severe localized structural damage. General havoc was wrought by high winds, excessive rainfall, high tides, and inundation by sea water as the hurricane moved inland. Much of the region affected comprised a rich agricultural region and as a result, a large percentage of the loss consisted of damage to crops.

For the second consecutive week unseasonably hot, humid weather prevailed east of the Great Plains, with the hottest weather relative to normal east of the upper Mississippi River where temperatures for the week averaged as much as 10° above normal. Maximum temperatures ranged in the 80's and 90's and minimum temperatures in the 60's and 70's, except in the extreme North where minima were generally in the 50's and 60's. Temperatures averaged near normal in the Great Plains, with considerable variation during the week. In the northern Great Plains the week began cool with frost in the Nebraska Panhandle on the 5th, after which rising temperatures through Saturday exceeded 100° at some stations, only to be followed by a sharp drop on Sunday. In the Far West, the week was slightly cooler than normal, except unusually cool in New Mexico and Colorado, with near record lows for the season reported in the latter State at the beginning of the period. In Utah, frost at higher elevations damaged some corn and beans.

Precipitation, produced by thunderstorms, was spotty from the Rocky Mountains to the Atlantic coast, but generally adequate in most areas to maintain satisfactory soil moisture. Moderate to heavy rains fell in Montana, North Dakota, and the northern two-thirds of Minnesota on the 9th and 10th. Moderate to heavy rainfall west of the Continental Divide was mostly limited to eastern Idaho, southern Utah, and parts of Arizona, most of it falling about midweek. In the Pacific States and Nevada, the week was extremely dry, with most stations reporting no rain at all. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - IDAHO - Adult populations generally light in Bonneville, Bannock, Power and Oneida Counties week ending August 18; some light damage observed. (Olson). Surveys of Conservation Reserve lands in Troy-Deary-Potlatch areas of Latah County showed some 400 acres in Troy vicinity infested with at least 10 grasshoppers per square yard; principal species Camnula pellucida, Melanoplus bilituratus and M. femurrubrum. Pastures and meadows in area north of Deary-Schwartz Creek, Vassar Wet, Tee, Shea and Erickson meadows in Latah County had populations, principally C. pellucida, running from 8 to over 50 per square yard. Bluegrass in these meadows especially damaged; total of 1,200 acres severely infested. Egg laying in progress. (Manis et al., Sept. 1). NORTH DAKOTA - Adult survey in east central counties during week ending September 1 showed generally light infestations present. Little damage observed in late crops throughout area. M. bivittatus and M. femurrubrum dominant species. Evaluation of adult survey data for western rangeland shows threatening or above infestations on 455,480 acres and light infestation on 806,080 acres. Acres infested (threatening or above) were 21,120 in Slope, 135,040 in Billings, 64,000 in Golden Valley, 169,000 in McKenzie, 50,000 in Dunn and 16,320 in Williams County. (N. D. Ins. Sur.). MISSOURI - Counts still high in northeast and southwestern areas. General rains throughout these areas kept vegetation in fencerows and wastelands green so that very little damage to cultivated crops is evident. Counts in idleland areas ranged 12-41 grasshoppers per square yard; mainly adult M. bilituratus, M. differentialis and M. femurrubrum. (Munson, Thomas, Wood). OHIO - Limited acreages of clover, soybeans, corn and potatoes reported receiving economic damage enough to justify grasshopper controls in Mercer and Clinton Counties. (Holdsworth, Sept. 1). PENNSYLVANIA - Dissosteira carolina quite common, 1-2 per square yard, in grassy areas of Elk County on August 17. (Miller). DELAWARE - M. differentialis adults fairly common in soybeans in Kent County; causing light feeding injury. (Burbutis, Mason).

FIELD CRICKETS - NORTH DAKOTA - Scattered, high populations continue to damage flax and soybeans in southeastern area. (N. D. Ins. Sur., Sept. 1).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Found for first time in Chambers County. (Buttram). MARYLAND - Larval infestations in sweet and field corn ranged 8-48 percent in Queen Annes County; ear infestation becoming more common. (U. Md., Ent. Dept.). INDIANA - Second generation appearing in large numbers in popcorn in Evansville area. (Everly, Sept. 1). MINNESOTA - Second-generation egg masses observed in southeastern and south central districts; counts varied greatly, ranging 0-40 per 100 plants. Egg masses averaged 10 per 100 plants in southeast and 3 in south central district. Development is as follows: Southeast - 8 percent third instar, 17 percent fourth instar, 17 percent fifth instar and 58 percent emerged; south central - 71 percent fifth instar and 29 percent emerged. (Minn. Ins. Rpt., Sept. 1). SOUTH DAKOTA - Percent plants infested ranged 12-68 and averaged 48 in central area. Larvae first to fifth stage and average 1.8 per infested plant; mostly second and third stages in ears. Some breakage occurred, but damage light. (Hanten). NEBRASKA - Heavy moth flights occurred in Adams County; second-brood egg masses and larvae (first, second and third stages) present. Adult activity decreased in Hamilton County. (Stokes, Sept. 1). First and third stage larvae commonly found feeding in tips of ears in central and eastern areas. (Bergman, Sept. 1). Second to fourth instars infesting corn ears in central and eastern areas. (Bergman).

CORN EARWORM (Heliothis zea) - CALIFORNIA - Light on corn in Upper Lake, Lake County. (Cal. Coop. Rpt.). TEXAS - Light in grain sorghum in Burleson County. (Randolph). OKLAHOMA - Infestations light to medium in southwest, southeast and north central areas on alfalfa. Light, 1 larva per 20 heads, in grain sorghum in north central area. Some damage to peanuts noted in Caddo County. (Okla. Coop. Sur.). ARKANSAS - Larvae averaged 0.18 per head on sorghum on University of Arkansas farm at Fayetteville. (Rolston). Larvae averaged 2.5 per 30 feet of row in 10 soybean fields surveyed in Jefferson County (Boyer, Whitcomb) and highest count in Pope County 11 per 10 counts of 3 feet of row per field. (Dumas).

MISSOURI - Counts in heads of grain sorghum in southwest and west central areas very low; 0-9 per 100 heads. (Munson, Thomas, Wood). NEBRASKA - Very light on corn in central and eastern areas. (Bergman, Sept. 1). MINNESOTA - Averaged 20 larvae per 100 corn plants in field of Goodhue County; only field found infested during week ending September 1. (Minn. Ins. Rpt.). INDIANA - Adults appeared in great numbers in traps in sweet corn field on night of August 31 in Tippecanoe County; 12-15 per trap. (Deay). DELAWARE - Young larvae present in Sussex County alfalfa. (Burbutis, Mason). MARYLAND - Larvae very common in ears of mature corn in most sections. (U. Md., Ent. Dept.). VIRGINIA - Widespread, medium severe infestation of early stage larvae on soybeans in Charles City County; treatments underway. (Settle). SOUTH CAROLINA - Some locally heavy pod infestations in soybeans in Clarendon, Orangeburg, Berkeley and Williamsburg Counties. (Nettles et al., Aug. 28). Some larvae occasionally found in soybean fields from Allendale County to the coast. (Nettles et al.). ALABAMA - Caused considerable damage to peanuts in peanut-growing areas of State; and severe damage to soybeans by feeding on pods of beans in Coffee, Houston, Mobile, Escambia and Baldwin Counties. Damage to grain sorghum in Houston County light to moderate. (Buttram).

FALL ARMYWORM (Laphygma frugiperda) - TEXAS - Medium to heavy, local populations attacking late grain sorghum in Coryell County and coastal Bermuda grass in Madison County. (Garner, Garrett). OKLAHOMA - Decreased in alfalfa in southeast and southwest. (Okla. Coop. Sur.). ALABAMA - Infestations light on peanuts, velvetbeans and grain sorghum in Coffee, Houston and Henry Counties. (Buttram). DELAWARE - Larvae present in alfalfa in Sussex County. (Burbutis, Mason).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - NEW MEXICO - Causing light damage to broomcorn and field corn in Roosevelt County. (N. M. Coop. Rpt.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Infestations medium on grain sorghum in Burleson County. (Randolph).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Larvae 25-35 per head in sorghum in south central area. (Okla. Coop. Sur.). ARKANSAS - Larvae averaged 0.25 per head on sorghum at University of Arkansas farm at Fayetteville; pupation underway. (Rolston). MISSOURI - Counts in grain sorghum in southwest low; very few fields found infested. Larval counts ranged 1-11 per 10 heads in infested fields. (Munson, Thomas, Wood).

SOD WEBWORMS (Crambus spp.) - OREGON - Found in Merion bluegrass seed fields in Silverton hills area of Marion County. In 2 fields checked, larvae averaged 5 per square-inch sample. (Every).

A SKIPPER (Lerodea eufala) - CALIFORNIA - Light to medium infestations on corn plantings in Chowchilla, Madera County; also reported infesting sorghum in other locations. This species had not previously been recognized as a commercial pest in the State until 1961. (Cal. Coop. Rpt.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Light in grain sorghum in Burleson County. (Randolph).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MINNESOTA - Adults averaged 3 per corn plant in southeast and 0.75 per plant in south central district; damage to silks evident in only a few fields in Olmsted County. (Minn. Ins. Rpt., Sept. 1). OHIO - Adults extremely abundant and severely damaged silks of dent corn in Fulton and Sandusky Counties during past several weeks. Considerable loss due to incomplete pollination anticipated in many fields of late corn. General population appears lower elsewhere in northwestern section of State. (Triplehorn, Blair).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - VIRGINIA - Appears to be of considerable concern to peanut growers this year; injury to the crop approaches total destruction in many areas. (Boush). OKLAHOMA - Light, 2 per

sweep, in alfalfa in southeast. (Okla. Coop. Sur.).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - *D. virgifera* dominant species on corn in counties along Platte River from Dawson County east to Seward County. North and east of this area, *D. longicornis* and *D. undecimpunctata howardi* also present. Gravid females comprise large population. Adult feeding caused damage to 5-10 percent of ear tips in central and eastern areas. Adult survey nearing completion. (Bergman, Sept. 1). *D. virgifera*, *D. longicornis* and *D. undecimpunctata howardi* adults continue feeding on corn ears in southern, central and eastern areas; light populations of all three species present on sorghums and legumes adjacent to corn. (Bergman). SOUTH DAKOTA - *D. virgifera* dominant species on corn in central area, with *D. longicornis* present. Gravid females present. Adults causing light damage to about 7 percent of corn tips. (Hanten). Unspecified species reported damaging cornfield in Minnehaha County. (Mast).

DESERT CORN FLEA BEETLE (*Chaetocnema ectypa*) - ARIZONA - Adults heavy in some central area corn and sorghum. (Ariz. Coop. Sur.).

A MAY BEETLE (*Phyllophaga rugosa*) - SOUTH DAKOTA - Larvae damaging lawns in Brookings and Hughes Counties. (Mast).

CORN LEAF APHID (*Rhopalosiphum maidis*) - SOUTH DAKOTA - In central area, 26 percent of corn plants infested; colonies generally small. (Hanten). NEBRASKA - Continues light in milo. (Bergman). TEXAS - Heavy in Roberts County on grain sorghum. (Joyner). ARIZONA - First few individuals of season of this species and *Hysteroneura setariae* noted on sorghum in central area. (Ariz. Coop. Sur.).

RICE STINK BUG (*Oebalus pugnax*) - ARKANSAS - Ranged 6-52 per 100 sweeps in 10 rice fields checked in Chicot County; more than 50 percent nymphs. (Whitcomb, Boyer).

CHINCH BUG (*Blissus leucopterus*) - ALABAMA - Continues to cause moderate to heavy damage in Russell County. Light infestations reported on rye. (Buttram).

APHIDS - NEW MEXICO - Undetermined species reported heavy in some fields of broomcorn and field corn in Roosevelt County. (N. M. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) - COLORADO - Populations decreased in Delta County on corn due to recent weather conditions. In general, populations very light in eastern area, with little or no damage occurring. (Bulla, Jenkins).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - IDAHO - Causing severe damage to many fields in Canyon County. Several fields of fall-seeded alfalfa killed and many others severely damaged. Great reduction in late-cut hay crop expected. Most severe damage observed in alfalfa in Arena Valley, Middleton, Fargo and Snake River Valley areas in southwestern section of State. In alfalfa hay fields, counts over 40 per sweep, with some having 40 per plant in newly seeded fields. (Beckolt, Waters). NEBRASKA - Averaged one per 50 sweeps in Butler, Polk and York Counties. (Bergman). COLORADO - Light; unchanged from previous week. (Bulla, Jenkins). KANSAS - Counts in northeast average 75 per sweep on alfalfa 8-14 inches tall. (Peters). MISSOURI - Found in only about one-half of fields checked in southwestern area; counts in infested fields ranged 1-6 per sweep. (Munson, Thomas, Wood). OKLAHOMA - Continues light in most areas surveyed in south central and southwest; one alfalfafield contained a heavy infestation 50-75 per sweep. (Okla. Coop. Sur.).

PEA APHID (*Macrosiphum pisi*) - WYOMING - Counts averaged 40 per 100 sweeps in alfalfa in Lincoln and Teton Counties and 30 per 100 sweeps in Sublette County. (Fullerton). COLORADO - Light on alfalfa in all areas. (Bulla, Schweissing, Jenkins). OKLAHOMA - Light, one per sweep, in alfalfa in southeast and southwestern areas. (Okla. Coop. Sur.). MISSOURI - Counts in alfalfa in southwest ranged 0-15 and averaged 7 per sweep. (Munson, Thomas, Wood). MINNESOTA - Counts per 100 sweeps in alfalfa averaged 930 in southeast and 600 in south

central district. (Minn. Ins. Rpt., Sept. 1). PENNSYLVANIA - Averaged 3 table-spoons per 25 sweeps on alfalfa in Butler County on August 30. (Adams). DELAWARE - Averaged one per sweep statewide on alfalfa, with 20 per sweep locally in New Castle County. (Burbutis, Mason).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Adults and nymphs reduced throughout State on alfalfa and soybeans; highest count 2 per sweep in Kent County alfalfa. (Burbutis, Mason). PENNSYLVANIA - Counts 1-3 per sweep in alfalfa in Butler County on August 30. (Adams). OKLAHOMA - Light, one per sweep, in alfalfa in southeast. (Okla. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 25 per 100 sweeps in alfalfa in Lincoln, Teton and Sublette Counties. (Fullerton).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - DELAWARE - Adults averaged one per sweep and nymphs 60 per 100 sweeps in alfalfa in southern Sussex County. (Burbutis, Mason).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Infestations continue very heavy in alfalfa statewide; averaged 200-500 per 100 sweeps. (Ariz. Coop. Sur.). TEXAS - Range 15-60 per 5 sweeps in alfalfa in Burleson County. (Randolph). OKLAHOMA - Light, less than one per sweep, in alfalfa in southwest. (Okla. Coop. Sur.). ARKANSAS - Averaged 8.4 per 30 feet of row in 10 soybean fields surveyed in Jefferson County. (Boyer, Whitcomb). SOUTH CAROLINA - Fairly numerous in untreated soybean fields from Allendale County to the coast; little excessive shedding of blooms noted. (Nettles et al.).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults averaged slightly under one per sweep in soybeans and alfalfa over State; nymphs increasing in some areas of Sussex County. (Burbutis, Mason). MARYLAND - Ranged 1-30 per sweep on alfalfa in Queen Annes County. (U. Md., Ent. Dept.). PENNSYLVANIA - Severe yellowing of alfalfa noted in Butler County on August 30. (Adams).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults and nymphs greatly increased in more mature soybean fields in Kent County; up to 10 per sweep. (Burbutis, Mason).

A CICADA (Diceroprocta apache) - ARIZONA - Heavy adult populations present in some areas of Yuma County. Along edges of some alfalfa seed fields, 20-25 percent of stems damaged by egg deposition. Some deposition also occurring in sorghum stalks just below the head. (Ariz. Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - KANSAS - Occasional adults and larvae observed feeding on soybeans in Wyandotte County, northeast area, and in Johnson County, east central area. Damage very light. This is first report of feeding on soybeans in the State. (Calkins, Charlton, Peters). SOUTH CAROLINA - Most serious damage to soybeans found in community of Clarendon County. (Nettles et al., Aug. 28). In several places from Allendale County to the coast, extremely heavy flights noted at 10 a.m. (Nettles et al.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ARKANSAS - Averaged 5.7 per 30 feet of row in soybeans in 10 fields checked in Jefferson County. (Boyer, Whitcomb). SOUTH CAROLINA - Adults appear to be more numerous on soybeans than during recent years in Clarendon, Orangeburg, Berkeley and Williamsburg Counties. (Nettles et al., Aug. 28).

MARGINED BLISTER BEETLE (Epicauta pestifera) - SOUTH CAROLINA - More numerous than in recent years on soybeans in Clarendon, Orangeburg, Berkeley, and Williamsburg Counties; appreciable foliage injury observed in small areas of Orangeburg County. (Nettles et al., Aug. 28).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Adults averaged 2 per 10 sweeps in a 60-acre alfalfafield in Queen Annes County. (U. Md., Ent. Dept.). WYOMING -

Adults averaged 20 per 100 sweeps and larvae 35 per 100 sweeps in alfalfa in Lincoln, Teton and Sublette Counties. (Fullerton).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Infestations continue heavy in some alfalfa fields statewide; larvae averaged 10-250 per 100 sweeps. (Ariz. Coop. Sur.). UTAH - Numerous in occasional alfalfa fields in Magna-Sandy area of Salt Lake County. (Knowlton). IDAHO - Larvae and adults abundant in alfalfa in Canyon County. (Beckolt). MINNESOTA - Counts generally low in southeast and south central districts; occasional alfalfafield has 100 per 100 sweeps. (Minn. Ins. Rpt., Sept. 1). DELAWARE - Larvae present in alfalfa in New Castle and Sussex Counties and soybeans in Kent County. (Burbutis, Mason).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Larvae averaged 8.6 per 30 feet of row in 10 soybean fields surveyed in Jefferson County. (Boyer, Whitcomb). Highest larval count in soybeans in Pope County 206 per 100 sweeps. (Dumas). SOUTH CAROLINA - Most numerous lepidopteron shaken from soybean plants during week ending August 28 in Clarendon, Orangeburg, Berkeley and Williamsburg Counties; 20 found in one field in Orangeburg County. (Nettles et al.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - ALABAMA - Damage to peanuts light to moderate in peanut-growing area in southeast section of State. Heavy infestations observed on velvetbeans in Coffee County. (Buttram, Grimes). SOUTH CAROLINA - No specimens found in soybeans; 2 adults caught in a light trap at Charleston on August 27. Appearance of species seems to be about 2 weeks behind schedule. (Nettles et al., Aug. 28).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Light, 0.5 larva per sweep, in alfalfa in southeast. (Okla. Coop. Sur.). SOUTH CAROLINA - Present in soybeans from Allendale County to the coast. (Nettles et al.).

BEEF ARMYWORM (Spodoptera exigua) - TEXAS - Larvae range 25-75 per 5 sweeps on alfalfa in Burleson County; also heavily damaging castorbeans. (Randolph).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Light in most alfalfa fields in southwest one field heavily infested, 6-8 per sweep. (Okla. Coop. Sur.).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Medium infestations in peach fruit in Tehachapi, Kern County. (Cal. Coop. Rpt.). MARYLAND - Some third-brood larvae noted in apples in Hancock area. (U. Md., Ent. Dept.).

RED-HUMPED CATERPILLAR (Schizura concinna) - NORTH DAKOTA - Light, local infestation defoliating apple at Fargo. (N. D. Ins. Sur., Sept. 1). CALIFORNIA - Medium populations on plum trees in Willow Creek, Humboldt County. (Cal. Coop. Rpt.).

PEACH TWIG BORER (Anarsia lineatella) - OREGON - Larvae infested prune fruit in Polk, Benton and Marion Counties. (Capizzi).

FILBERTWORM (Melissopus latiferreanus) - CALIFORNIA - Heavy larval infestations in nectarines in San Diego, San Diego County. (Cal. Coop. Rpt.). OREGON - Larvae infested prune fruit in Polk, Benton and Marion Counties. (Capizzi).

PEAR PSYLLA (Psylla pyricola) - CALIFORNIA - Light infestations on pear trees in Santa Margarita, San Luis Obispo County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Medium populations in peaches in Santa Paula, Ventura County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NORTH DAKOTA - Moderate infestations on apple nursery stock locally in eastern area; heavy infestations on raspberries in many communities. (N. D. Ins. Sur., Sept. 1).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Small numbers present in Washington County. (Okla. Coop. Sur.).

A FRUIT FLY - FLORIDA - Specimen collected at Key West Naval Base during period August 14-18 determined as Anastrepha sp. either edentata or suspensa. (Fla. Coop. Sur., Sept. 1).

Citrus Insect Situation in Florida - End of August - CITRUS RUST MITE (Phyllocop-truta oleivora) infested 46 percent of groves (norm 60 percent); 29 percent economic (norm 39 percent). Population below average for time of year. Current moderate level will continue through September with increasing trend at latter part of month. Few high infestations expected in all areas with fruit more heavily infested than leaves. Highest districts with threatening conditions are west coast, Gainesville, Bartow and upper east coast. CITRUS RED MITE (Panonychus citri) infested 25 percent of groves (norm 41 percent); 13 percent economic (norm 21 percent). Below average populations will prevail in most districts throughout September; highest district is Gainesville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 18 percent of groves; 7 percent economic. Populations low in all districts and further decrease expected. FLORIDA RED SCALE (Chrysomphalus aonidum) infested 52 percent of groves (norm 59 percent); 8 percent economic (norm 11 percent). Infestations light with little change expected in most districts. Statewide populations below average; highest district with threatening conditions is upper east coast. PURPLE SCALE (Lepidosaphes beckii) infested 48 percent of groves; 1 percent economic. Populations will remain at very low level in all districts. Controls recommended for scale insects. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

CALIFORNIA RED SCALE (Aonidiella aurantii) - CALIFORNIA - Heavy population on lemon and orange in dooryard planting in Yuba City, Sutter County. (Cal. Coop. Rpt.).

PURPLE SCALE (Lepidosaphes beckii) - CALIFORNIA - Heavy, local population on citrus in El Cajon, San Diego County. (Cal. Coop. Rpt.).

GRAPE LEAF ROLLER (Desmia funeralis) - CALIFORNIA - Medium populations appeared in vineyards in Easton, Fresno County. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Heavy larval populations on grapes in Monmouth, Fresno County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

TUBER FLEA BEETLE (Epitrix tuberis) - COLORADO - Counts light in Montrose and Delta Counties on potatoes; ranged 0-20 per 100 sweeps. (Bulla).

POTATO FLEA BEETLE (Epitrix cucumeris) - PENNSYLVANIA - Caused considerable damage to several potato fields in Butler County in early August. (Adams, Aug. 24).

MARGINED BLISTER BEETLE (Epicauta pestifera) - PENNSYLVANIA - Abundant on potatoes in Butler County. (Adams, Aug. 30).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - PENNSYLVANIA - Abundant on potatoes in Lawrence and Clarion Counties and one-quarter acre spots with one-third to complete defoliation in Butler County. (Adams, Aug. 30).

THREE-LINED POTATO BEETLE (Lema trilineata) - PENNSYLVANIA - Trace infestations present in most potato fields in Butler County. (Adams, Aug. 30).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Adults and nymphs present to common on pumpkin squash in Kent and Sussex Counties; adults and nymphs averaged one per sweep on beans statewide. (Burbutis, Mason). CALIFORNIA - Light to heavy populations on potato, beet and bean plantings in Salinas Valley, Monterey County. (Cal. Coop. Rpt.). PENNSYLVANIA - Present on potatoes in Butler County; 4 per 25 sweeps. (Adams, Aug. 30).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Counts on potatoes in Weld County ranged 1-300 per 10 leaves. (Simpson). PENNSYLVANIA - Very light to moderate on potatoes in Butler County. (Adams, Aug. 30). DELAWARE - Alate forms and very young nymphs fairly common on cabbage in central Kent County. (Burbutis, Mason).

POTATO APHID (Macrosiphum euphorbiae) - PENNSYLVANIA - Very light to moderate on potatoes in Butler County. (Adams, Aug. 30).

Potato Aphids in Aroostook County, Maine - Aphid populations on untreated potatoes at Presque Isle dropped substantially during past week apparently due to action of entomogenous fungi and maturation of fall migrants. Aphids killed by disease much more abundant than those killed by parasites. (Shands et al.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae light in young lettuce in Maricopa County; egg counts average 2-3 per plant in some fields. (Ariz. Coop. Sur.). NEW MEXICO - Increased on lettuce and cabbage in Dona Ana County. (N. M. Coop. Rpt.). MARYLAND - Increased on broccoli and cabbage statewide. (U. Md., Ent. Dept.).

FLEA BEETLES (Phyllotreta spp.) - MARYLAND - Abundant on broccoli and cabbage in Montgomery and Howard Counties. (U. Md., Ent. Dept.).

CABBAGE APHID (Brevicoryne brassicae) - MARYLAND - Light to moderate on cabbage and broccoli in Montgomery and Howard Counties. (U. Md., Ent. Dept.).

SQUASH BEETLE (Epilachna borealis) - MISSOURI - Single specimen collected at Columbia, Boone County, on wild cucumber. (Munson, Thomas, Wood).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NORTH DAKOTA - Heavy infestation caused severe injury to sugar beets in 15-acre field near Neche, Pembina County. (N. D. Ins. Sur.).

SUGAR-BEET CROWN BORER (Hulstia undulatella) - CALIFORNIA - Heavy populations on beets in Artesia, Los Angeles County. (Cal. Coop. Rpt.).

SUGAR-BEET ROOT APHID (Pemphigus betae) - NORTH DAKOTA - Scattered, light infestations locally in sugar beet fields throughout northern Red River Valley. (N. D. Ins. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - KANSAS - Additional infestations found in Wyandotte, Johnson and Leavenworth Counties on beans; immature counts ranged 0-20 per leaf, adults 0-5 per leaf. Damage ranged from none to very severe. Leavenworth and Johnson are new county records for State. (Calkins, Charlton, Peters). MARYLAND - Moderate to heavy on beans locally in Montgomery and Howard Counties. (U. Md., Ent. Dept.). DELAWARE - Larvae present on beans in northeastern Sussex County. (Burbutis, Mason).

BEAN LEAF BEETLE (Cerotoma trifurcata) - KANSAS - Occasional adults on beans in Leavenworth, Wyandotte and Johnson Counties; damage minor. (Calkins, Charlton, Peters).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Heavy populations on bean plantings in Patterson, Stanislaus County. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults and larvae present in bean fields statewide. (Burbutis, Mason).

A WHITEFLY (prob. Trialeurodes sp.) - DELAWARE - Adults rather abundant on beans in Sussex County. (Burbutis, Mason).

A LYGAEID (Nysius sp.) - CALIFORNIA - Heavy populations of nymphs migrated onto bean plantings in Colusa, Colusa County. (Cal. Coop. Rpt.).

LYGUS BUGS (Lygus spp.) - IDAHO - Some late-season increase on crops in southwestern area; damaged beans in Caldwell area. (Beckolt).

GARDEN FLEAHOPPER (Halticus bracteatus) - DELAWARE - Adults and nymphs present on beans in Sussex County; nymphs averaged 5-6 per leaf on pumpkin squash in Kent County. (Burbutis, Mason).

A MILLIPEDE (Diploiuulus latistriatus hesperus) - CALIFORNIA - Heavy populations in gardens attacked potatoes, onions and cucumber roots in Fortuna, Humboldt County. (Cal. Coop. Rpt.).

BEEF ARMYWORM (Spodoptera exigua) - CALIFORNIA - Heavy larval infestations on strawberry plants in Empire, Stanislaus County. (Cal. Coop. Rpt.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Light to medium infestations noted in southeast and southwest areas. Localized, heavy populations exist in dryland cotton in southwest. Light populations noted in north central area. (Okla. Coop. Sur.). ARKANSAS - Emergence of weevils generally heavier than previous week. Percentage of fields infested 96.4 compared with 96.7 previous week and 78.7 at same time in 1960. Average percent punctured squares 17.4 in southeast, 22.5 in central area, 18.7 in northeast and 21.7 in southwest. (Ark. Ins. Sur.). LOUISIANA - Average percent infested squares in Tallulah area 32 compared with 17 previous week. Infestation records of little value because of scarcity of squares. Infestations increased considerably over previous week. Emergence of adults heavy and movement from "cut out" fields occurring. Percent infestation exceeded 50 in many fields still under control programs. Infestations also increased rapidly in many fields where almost no infestation existed through August. Controls should be continued in over 50 percent of fields in Tallulah area through mid-September and boll protection will be needed in many fields through October 1. (Smith et al.). TENNESSEE - Migration to noninfested counties continues. Light infestations found in Obion and Dyer Counties. Infested squares 86 percent in untreated fields and 22 percent in treated fields in southern tier of counties. Very severe damage occurring to small bolls in late cotton. Controls still required. (Locke).

BOLLWORMS (Heliothis spp., et al.) - ARIZONA - Heavy populations continue to damage some untreated cotton statewide, with average counts 3-8 larvae per 100 plants. Control measures generally successful except in cases where shower activity has been bothersome. (Ariz. Coop. Sur.). NEW MEXICO - Very light infestation reported in Chaves and Roosevelt Counties. (N. M. Coop. Rpt.). OKLAHOMA - Light infestations noted in most of southwest; some counts up to 9 percent in dryland cotton. Infestations 5-15 percent in southeastern areas. (Okla. Coop. Sur.). ARKANSAS - Infestations remain spotty. In some areas, egg and larval counts high. Eggs now being laid on parts of plants other than terminals in higher numbers than at any time this year. Percent infested fields 60.4 compared with 68.2 previous week and 70.6 at same time in 1960. (Ark. Ins. Sur.). TENNESSEE - Some controls applied in western area in those counties where boll weevil not a problem. Eggs 1-10 and larvae 1-8 per 100 terminals in infested fields. (Locke). LOUISIANA - Average percent square infestation 3 in Tallulah area. Infestations presently increasing. (Smith et al.).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Heavy infestations noted in some cotton in Stephens County. (Okla. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Infestations continue heavy in some fields in Yuma County and in central area; controls very successful in most cases. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - ARKANSAS - Adult found on a window, night of September 6, in Jonesboro, Craighead County. (Dowell).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Heavy populations on cotton in Wasco area, Kern County. (T. Leigh).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Larva collected from hibiscus bloom at Plantation Key, Monroe County, on August 31. This is seventh larva collected from hibiscus blooms at Plantation Key and Upper Matecumbe Key during July and August. (PPC, Fla. Coop. Sur.; Sept. 1).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Infestations continue light in cotton statewide. (Ariz. Coop. Sur.).

FLEAHOPPERS (Psallus seriatus and Spanogonicus albofasciatus) - NEW MEXICO - Light infestations in Roosevelt County cotton. (N. M. Coop. Rpt.).

STINK BUGS (Euschistus impictiventris and Chlorochroa sayi) - ARIZONA - Infestations increased in some fields in all areas, particularly cotton located near grain sorghum. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Infestations decreased, but damage still evident in some fields where cotton is still squaring. (Ariz. Coop. Sur.).

APHIDS - TENNESSEE - Heavy in some fields in western area; controls needed to prevent damage to lint. (Locke).

SPIDER MITES - TENNESSEE - Continue to mature some fields of cotton. Considerable damage still occurring in western area to late cotton where no controls applied. (Locke).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

WESTERN BARK BEETLE (Dendroctonus brevicomis) - CALIFORNIA - This species and Ips sp. infesting approximately 300 ponderosa pines in an 800-acre stand along Highway 88 in Amador County; infested trees to be removed to possibly avert a heavy loss later. (G. German). Scattered fads beginning to appear in ponderosa pine in Miami Creek Drainage area, Sierra National Forest. D. brevicomis and Ips sp. quite active in area. (K. L. Tameler).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - KANSAS - Established nursery infestations present in Sedgwick and Leavenworth Counties; however, Leavenworth County infestation probably present during 1960. As far as known, these are the first records of the species in the State. (Peters). Also see corrections on page 874.

SPRUCE BUDWORM (Choristoneura fumiferana) - CALIFORNIA - Infesting groups of fir in an 80-acre stand in Raider Canyon area in South Warner Mountains in Modoc County. Noticeable damage now showing. (W. Hamilton).

A COSMOPTERYGID (Periploca n. sp.) - CALIFORNIA - Causing heavy damage to junipers in Houghson, Stanislaus County. (Cal. Coop. Rpt.).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Reported on evergreens in Mayer and Texas Counties. (Okla. Coop. Sur.).

BALSAM-FIR SAWFLY (Neodiprion abietis) - CALIFORNIA - Causing spotted foliage damage to fir trees in many spots in Pinecrest area, Stanislaus County. (C.R. Quick).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - PENNSYLVANIA - Moderate to heavy on red pine generally and on a Christmas tree farm in Warren County on August 30. (Mikrut).

PINE BARK APHID (Pineus strobi) - MARYLAND - Heavy on several white pines in College Park area. (U. Md., Ent. Dept.).

MITES - UTAH - Damaged some blue spruce and juniper trees in Ogden area of Weber County. (Knowlton).

FALL WEBWORM (Hyphantria cunea) - RHODE ISLAND - Nests large and conspicuous in Warwick area on roadside brush. (Hansen). PENNSYLVANIA - Severe webbing general in south central area on hardwoods on August 20 (Balsbaugh) and common on hardwoods in Blair County area on August 28, but heaviest in that county (Schroeder). Appearing on hosts, deciduous trees and shrubs, in Montgomery, Bucks and Chester Counties. (Cole, Millett). Defoliation becoming apparent on hardwoods in Mercer County. (Miller, Aug. 30). NEW MEXICO - Light infestation of second generation on pecan, mulberry and poplar trees in southern area. (N. M. Coop. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - MARYLAND - Severe damage to honeylocust and mimosa noted in central and southern sections. (U. Md., Ent. Dept.). PENNSYLVANIA - Moderate in nursery in southeast; very light to scarce on ornamental mimosa. (Cole, Millett). Ornamental Moraine honeylocust infested in Bedford County. (Udine). INDIANA - Infestation general on mimosa trees in Evansville area. (Everly).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - PENNSYLVANIA - Larval infestation moderate on elms in Venango County on August 28. (Miller).

OAK SKELETONIZER (Bucculatrix ainsliella) - INDIANA - Reported causing damage to trees in northern area. (Matthew).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - RHODE ISLAND - Small, localized infestation observed on scrub oak in East Greenwich. (Mathewson).

POPLAR TENT MAKER (Ichthyura inclusa) - MARYLAND - Larvae stripped 3 small Lombardy

poplars at Silver Spring, Montgomery County. (U. Md., Ent. Dept.).

LOCUST LEAF MINER (Xenochalepus dorsalis) - PENNSYLVANIA - Scattered generally throughout Blair and Huntingdon Counties on locust on August 28. (Schroeder).

ELM LEAF BEETLE (Galerucella xanthomelaena) - COLORADO - Adults emerging in Grand Junction, Mesa County. Adults numerous and attracted to lights at night around dwellings. Severe defoliation of elms by larvae occurred in Mesa and Fremont Counties. (Hantsbarger, Bulla). OKLAHOMA - Damage continues widespread throughout State; adults still seeking shelter in buildings in Stillwater area. (Okla. Coop. Sur.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEVADA - Infested trees found for first time at Stead Air Force Base, Washoe County. (Bechtel, Parker). NEBRASKA - Infestation present in elm trees in Seward County. (Bergman).

ELM LEAF APHID (Myzocallis ulmifolii) - OKLAHOMA - Counts 4 per leaflet in Ponca City area. (Okla. Coop. Sur.).

EUROPEAN ELM SCALE (Gossyparia spuria) - CALIFORNIA - Heavy egg deposits on elm twigs now in Alturas area, Modoc County. (Cal. Coop. Rpt.).

TULIPTREE SCALE (Toumeyella liriodendri) - DELAWARE - Crawlers observed on tulip-trees in northern New Castle County on September 6. (MacCreary).

OBSCURER SCALE (Chrysomphalus obscurus) - PENNSYLVANIA - Eggs hatching August 18 in Harrisburg area, Dauphin County, on oaks, particularly pin oaks. Probably appeared 2 weeks earlier in southeastern and southern tier of counties. (Sleesman).

A MEALYBUG (Phenacoccus acericola) - RHODE ISLAND - Extremely heavy on leaves and branches of maple in Providence. (Mathewson).

LACE BUGS - NORTH DAKOTA - High populations continue to be reported on elms in southeastern area. (N. D. Ins. Sur., Sept. 1). MARYLAND - Continue heavy on azalea, sycamore, oak and pyracantha in Prince Georges County. (U. Md., Ent. Dept.).

NATIVE HOLLY LEAF MINER (Phytomyza ilicicola) - MARYLAND - Heavy on American holly at College Park, Prince Georges County. (U. Md., Ent. Dept.).

HONEYSUCKLE SAWFLY (Zaraea inflata) - PENNSYLVANIA - Large numbers on various plants along roadsides in Bedford County. (Udine).

BOXELDER LEAF ROLLER (Gracilaria negundella) - NEVADA - Causing heavy damage to box-elder in Elko, Elko County. (Del Curto).

A LEAF BEETLE (Chlamisus comptoniae) - PENNSYLVANIA - Seven specimens collected from sweetfern (Comptonia peregrina) in Clarks Valley, Dauphin County, on May 30; a new State record. (Balsbaugh).

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - PENNSYLVANIA - Infesting lilac, azalea and rose in a home garden at Springfield, Delaware County. (Cole, Millett).

GLADIOLUS THRIPS (Taeniothrips simplex) - UTAH - Damaged gladiolus blossoms and leaves in some Salt Lake City gardens. (Knowlton).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - PENNSYLVANIA - Adults numerous and found feeding on blossoms of gladiolus in Snyder County on August 22. (Balsbaugh).

APHIDS - OKLAHOMA - Heavy infestations of several species reported from north central area on crapemyrtle, pyracantha and cotoneaster. (Okla. Coop. Sur.).

CALIFORNIA - Macrosiphum coweni infesting sagebrush in El Dorado National Forest. (J. Flynn).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NORTH DAKOTA - High populations causing severe damage to annual and perennial flower plants in home gardens in many sections of State. (N. D. Ins. Sur., Sept. 1).

INSECTS AFFECTING MAN AND ANIMALS

FACE FLY (Musca autumnalis) - ARKANSAS - Survey of two herds in Polk County yielded no infestations. (Ark. Ins. Sur.). SOUTH DAKOTA - Four new county records reported; very heavy on cattle and horses in Bennett and Washabaugh Counties and light on cattle in Douglas and McCook Counties. (Mast, Hanten). WYOMING - No infestations found in surveys in Teton, Lincoln and Sublette Counties. (Fullerton).

HORN FLY (Haematobia irritans) - NORTH DAKOTA - High populations continue in most sections of State. (N. D. Ins. Sur., Sept. 1). WYOMING - Adults very numerous on livestock herds in Lincoln and Teton Counties. (Fullerton). OKLAHOMA - Populations decreased from previous week. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - NORTH DAKOTA - High populations continue in most sections of State. (N. D. Ins. Sur., Sept. 1). WYOMING - Populations remain high on cattle in Lincoln, Teton and Sublette Counties. (Fullerton). MARYLAND - Very troublesome to humans and dogs at beach near Lexington Park, St. Marys County. (U. Md., Ent. Dept.). OKLAHOMA - Increased over previous week in north central area. (Okla. Coop. Sur.).

SCREW-WORM (Callitroga hominivorax) - FLORIDA - Aerial dispersals of 5,332,800 sterile flies by August 30 covered over 1,900 square miles in a 5-county area centered near Bonifay, including one county in Alabama. Inspection of livestock and aerial dispersal of sterile flies continued in western eradication area; no positive reports since June 27. Dispersals expected to continue at rate of 500,000 flies per day for several weeks. (Conner, Fla. Dept. of Agri.). KANSAS - Heavily infested navel of newborn calf in Riley County. (Pitts). OKLAHOMA - Scattered cases in Stillwater area. (Okla. Coop. Sur.).

MOSQUITOES - NEW MEXICO - Populations increased in Dona Ana County. (N. M. Coop. Rpt.). UTAH - Caused annoyance in Cache and Box Elder Counties on August 31. Aedes nigromaculis very numerous briefly in area north of Salt Lake City Airport. Culex tarsalis populations low and C. pipiens increased; Aedes dorsalis populations well below average in Salt Lake Mosquito Abatement district. (Knowlton). RHODE ISLAND - Various species becoming extremely abundant and troublesome in Wakefield and Narragansett areas. (Hansen).

HOUSE FLY (Musca domestica) - NORTH DAKOTA - High populations continue in most sections of State. (N. D. Ins. Sur., Sept. 1). SOUTH DAKOTA - Adults migrating indoors became a serious pest statewide. (Mast). NEBRASKA - Average populations present in east central area. (Jones). OKLAHOMA - Populations unchanged over previous week. (Okla. Coop. Sur.).

TABANIDS (Tabanus spp.) - OKLAHOMA - Populations of T. abactor, T. sulcifrons and T. lineola increased about 10 percent over previous week in Payne County. (Okla. Coop. Sur.).

BLOW FLIES - UTAH - Numerous about fishing camps locally in Logan Canyon, Cache County. (Knowlton).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Averaged 2 grubs per yearling steer in Osage County. (Okla. Coop. Sur.).

CATTLE LICE - UTAH - Numerous on some range bulls in Duchesne County. (Knowlton).

CAT FLEA (Ctenocephalides felis) - CALIFORNIA - Heavy populations invaded commercial store in Lake Cachuma, Santa Barbara County, and several homes in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

PUSS CATERPILLAR (Megalopyge opercularis) - FLORIDA - Venom setae pierced woman's finger with reaction similar to black widow spider bite in Tampa area, Hillsborough County. (Fla. Coop. Sur., Sept. 1).

EAR TICK (Otobius megnini) - ARKANSAS - Several specimens collected from cattle in Yell County. (Oakes).

BROWN DOG TICK (Rhipicephalus sanguineus) - CALIFORNIA - Heavy infestations locally in yards and kennel in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

STORED-PRODUCT INSECTS

A HAIRY FUNGUS BEETLE (Typhaea stercorea) - PENNSYLVANIA - Appeared in grain in barns and milkhouse in Elk and Clearfield Counties. (Adams, Aug. 27).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - NORTH DAKOTA - Heavy infestation locally in Hettinger County. (N. D. Ins. Sur., Sept. 1). SOUTH DAKOTA - Damaged stored grain in Spink County. (Hanten).

CASEMAKING CLOTHES MOTH (Tinea pellionella) - NORTH DAKOTA - Many cases with most adults emerged collected from stored bobcat and beaver pelts at Columbus, Burke County. (N. D. Ins. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - OKLAHOMA - Light to heavy in cotton and alfalfa fields in southeastern and southwestern areas. (Okla. Coop. Sur.). IDAHO - Common in alfalfa fields throughout Canyon County. (Beckolt). WYOMING - Hippodamia convergens adults averaged 18 per 100 sweeps in alfalfa in Lincoln, Teton and Sublette Counties. (Fullerton).

A LACEWING (Chrysopa sp.) - IDAHO - Common in alfalfa fields throughout Canyon County. (Beckolt).

NABIDS (Nabis spp.) - ARKANSAS - Most common predator in soybean fields surveyed in Jefferson County. (Ark. Ins. Sur.). WYOMING - Adults averaged 15 per 100 sweeps in alfalfa in Lincoln, Teton and Sublette Counties. (Fullerton).

A WASP (Scolia dubia) - VIRGINIA - Appeared in Kinsale, Westmoreland County. (Tarpley, Aug. 31). MARYLAND - Adults very abundant about golf course in Prince Georges County and numerous on lawn in Bethesda, Montgomery County. (U. Md., Ent. Dept.).

MISCELLANEOUS INSECTS

STRAWBERRY CROWN BORER (Tyloclerum fragariae) - SOUTH DAKOTA - Nuisance in homes in Meade and Edwards Counties. (Mast).

A BOSTRICHID (Stephanopachys substriatus) - CALIFORNIA - Medium infestation in Philippine mahogany woodwork in residence in San Diego, San Diego County. (V. Roth).

LESSER MEALWORM (Alphitobius diaperinus) - CALIFORNIA - Heavy populations migrating from cemetery grounds and invading homes in Ontario, San Bernardino County. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ARKANSAS - New infestations reported in Greene, northern Mississippi and St. Francis Counties. (Ark. Ins. Sur.).

FULLER ROSE BEETLE (Pantomorus godmani) - CALIFORNIA - Heavy local population on honeysuckle in San Diego, San Diego County. (V. Roth).

ASIATIC OAK WEEVIL (Cyrtepidistomus castaneus) - VIRGINIA - Caused concern in Cumberland, Cumberland County, and Bluefield, Tazewell County. (Tarpley). OHIO - Nuisance in homes in Washington, Pike and Athens Counties; determined by J. K. Knull. (Holdsworth).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - PENNSYLVANIA - Infestations light to heavy in southeastern area. (Cole, Millett).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Severely notched hedge, peony and lilac leaves locally in Logan. (Knowlton). NEVADA - Heavy infestations with moderate damage to home gardens in Lee area, Elko County. (Del Curto). COLORADO - Appeared on peach tree in Aurora, Arapahoe County. (Hantsbarger).

YELLOW JACKETS - UTAH - Annoying about several Logan and North Logan homes and in fishing area at mouth of Logan Canyon, Cache County. (Knowlton). NORTH DAKOTA - Home and yard infestations continue more numerous than usual in eastern section. (N. D. Ins. Sur.).

CICADA KILLER (Sphecius speciosus) - PENNSYLVANIA - Numerous in Harrisburg, Dauphin County and a nuisance in a warehouse in Erie County. (Sleesman, Miller; Aug. 16).

GIANT HORNET (Vespa crabro germana) - SOUTH CAROLINA - Collected in Laurens County; determined by F. McAlister. (Nettles et al.).

HARLEQUIN BUG (Murgantia histrionica) - CALIFORNIA - Medium populations in Placerville, El Dorado County. Species has been more numerous in many locations over State in gardens and on shrubs than in past years. (Cal. Coop. Rpt.).

CRICKETS - INDIANA - Nemobius spp. more abundant and causing greater nuisance around homes since 1959. (Matthew). PENNSYLVANIA - Acheta spp. appeared around homes in Centre County. (Adams, Aug. 27).

CORRECTIONS

CEIR 11(33):784 - EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - KANSAS - Infestation in Ellis County not established. However, pines were brought in from a Sedgwick County nursery this past spring and the infestation is established. There is also an established infestation in a Christmas tree planting in Leavenworth County. The Leavenworth County infestation was probably present during 1960. These are the only known infestations in the State. (Peters).

CEIR 11(34):803 - BOLL WEEVIL (Anthonomus grandis) - TEXAS - First collection of season from Conley County should be Donley County.

CEIR 11(36):853 - STABLE FLY (Stomoxys calcitrans) - SOUTH DAKOTA - Report from this state should have read HORN FLY (Haematobia irritans) rather than stable fly.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ip.	Perid. maucia	Prod. ornith.	Laphyg. frug.	Tric. ni	Alabama argillacea	Heliothis zea vires.
ARIZONA								
Mesa 8/24-30			1	52		242		215
ARKANSAS								
Hope 8/31-9/5	18	4						6
Kelso 8/31-9/5	1							
Fayetteville 8/31-9/5	17	8	6					47
Little Rock 8/31-9/5	8		17					41
CALIFORNIA								
Shafter 8/31-9/5		5	4			689*		24
COLORADO								
Alamosa 9/1-8	4		1					2
Dolores 9/1-8	5	2	1			2		3
FLORIDA								
Quincy 8/28								11
Gainesville 9/5-6	19	7		17	43			44
ILLINOIS								
Urbana (So. Farm) 9/1-7	80	42	96	34		5		60
INDIANA (Counties)								
Jasper 8/29,30;9/1,2	12	14	22		5			2
La Porte 8/29;9/4	114	62	14		12			34
Lawrence 8/30,31;9/1,5	34	21	9		3			11
Tiptecanoe 8/25,26,30,31;9/1-7	13	15	8		14			7
Vanderburgh 8/30;9/5	136	19	15	1	50			77
KANSAS								
Garden City 8/28-9/1		4	3					38
Hays 8/31,9/2,5	4		2	6				5
Manhattan 8/30-9/8	15	1	3	11				49
LOUISIANA								
Tallulah 9/2-8	10	3		3		49		8 4
MISSISSIPPI								
**Stoneville 9/1-7	201	122		398	80	2,019		801 25
NEBRASKA								
McCook 8/24,26,29,30,31	2	13	10		3		4	7 8
North Platte 8/31-9/6	104	58	2		1			4 1
Parks 8/18-31	26	15	27		2			25
Scotts Bluff Exp. Sta. 8/27-9/2	4	3	6					
NEW JERSEY								
Seabrook 8/27	5		1					
Bridgeport 8/27	23		4					11
Evesboro 8/27	5		4					3
SOUTH CAROLINA								
Charleston 9/3-10	8	29		203	165	24		301 5
Clemson 9/2-8	48	13	2	148	17			77
TEXAS								
Waco 9/2-8	58	32	30	19		1,684	345	341 4

* Too numerous to count on August 31 and approximately 500 on September 5. Total number for 9/2-4; 189.

** Two traps Stoneville (collections discarded one day)

OUTLOOK FOR FOREST INSECT ACTIVITY IN CALIFORNIA

FALL AND WINTER OF 1961-62

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Introduction: For the past two years, California has experienced heavy losses in timber due to BARK BEETLES. The most critical of these has been in areas suffering from moisture deficiency during the spring months. The spring precipitation picture for the State as a whole for 1961 is quite variable, ranging from more than 100 percent of normal in Eureka to about 30 percent of normal in San Diego. In most cases the seasonal precipitation follows about the same pattern as that presented by the spring period. Taking all known factors into consideration, the outlook for forest insect problems for the fall and winter (1961-1962) appear as follows: The overall outlook for the State indicates that losses from BARK BEETLES will be generally light in the north coast area, moderate in the northeastern portion of the State, heavy in the central and southern Sierra and very heavy in southern California. Losses on burns, particularly those which occurred two years ago, are expected to show a marked increase. Lightning-struck trees, particularly ponderosa pine, are expected to create an additional insect hazard in all areas where early summer electrical storms were prevalent.

North Coast Zone: This includes the northwestern counties from Mendocino, Lake and Glenn Counties north to Siskiyou County. No major change in insect activity is expected in this area by the major forest insects over the zone as a whole. Some scattered, local outbreaks of WESTERN PINE BEETLE (Dendroctonus brevicomis) are expected in the lower-elevation fringe pine type. Some increase in Melanophila drummondi and DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) in Douglas-fir will probably occur. Losses are expected to increase on the two-year-old burns.

Northeastern California Zone: This zone includes the Cascades and Sierra Nevada Ranges from eastern Siskiyou and Modoc Counties south to Plumas County. No major change in insect activity is expected in this zone as a whole. WESTERN PINE BEETLE is expected to remain at about the same level as last year, with scattered losses continuing at a moderate to high level in eastside stands. Some increases are expected locally in trees struck by lightning in the early summer storms. Ips spp. activity is expected to decrease over last year. FIR ENGRAVER (Scolytus ventralis) will probably continue at its present high level over the zone as a whole. Activity of JEFFREY PINE BEETLE (Dendroctonus jeffreyi) and MOUNTAIN PINE BEETLE (Dendroctonus monticolae) will continue at about the same as for last year. Some increase of CALIFORNIA FLATHEADED BORER (Melanophila californica) and M. drummondi may occur. SPRUCE BUDWORM (Choristoneura fumiferana) activity is expected to be slightly downward. Insect activity around the major burns is expected to increase over last year.

Central and Southern Sierra Zone: This zone includes the Sierra Nevada Range from Sierra County south to Kern County, Inyo and Mono Counties, and embraces the Yosemite and Sequoia-Kings Canyon National Parks. Insect activity in the northern areas and in the Mother Lode country may decrease, but epidemic losses in the southern part of the Sierra Nevada Range will probably continue. Ips spp. activity is expected to be less than last year, particularly in the northern part and in the Mother Lode. WESTERN PINE BEETLE will cause less damage in the northern portion of the zone, but will continue to cause high losses in the southern part. FIR ENGRAVER is expected to be at a high level over the whole zone, but not to the extreme high level of last year. JEFFREY PINE BEETLE is expected to continue at a relatively high level in local areas. The MOUNTAIN PINE BEETLE situation will probably not change. The situation concerning a PINE REPRODUCTION WEEVIL (Cylindrocopturus eatoni) may improve, particularly in

natural stands. In Douglas-fir, Melanophila drummondi is expected to remain at a high level in a few local areas, but with some improvement expected. Insect activity around the major burns is expected to increase over last year.

Southern California Zone: This includes the forested areas south of the Tehachapi Mountains and in the Coast Range south of Monterey Bay. The insect situation in southern California will reach an alltime high in areas where no control action is taken. The maintenance control action that has been underway for the last four years in southern California should keep losses stabilized in all areas under maintenance control. The insects involved in this zone include WESTERN PINE BEETLE, Ips spp., JEFFREY PINE BEETLE, FIR ENGRAVER, MOUNTAIN PINE BEETLE and CALIFORNIA FLATHEADED BORER. There are no important timber burns in southern California.

Change of Generic Name for Field Crickets

As a result of research in systematics and comparative behavior at the University of Michigan (Ann Arbor) and MacDonald College (Montreal, Canada), American field crickets which for several years have been placed in the genus Acheta are now referred to the genus Gryllus (Jobin, L. J. and Bigelow, S. 1961. Canad. Ent. 93(4):313, footnote.). Gryllus was the traditional generic assignment for these crickets prior to a preliminary division of the genus (in a broad sense) that occurred some years ago. The house cricket, domesticus (L.), remains in Acheta, as it is generically distinct from the field crickets. Seven species of Gryllus currently are recognized in the eastern United States, but, without information relating to the songs or other aspects of bionomics, species identifications sometimes are practically impossible. Only preliminary information on the species inhabiting the western half of the United States is available, although work based on the latest methods is under way. (A. B. Gurney, Insect Identification & Parasite Introduction Research Branch, Entomology Research Division, USDA).

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

Some important interceptions that were reported June 30, 1961, by the Plant Quarantine Division, ARS, USDA, follow. These reports are based on identifications received from Federal taxonomists at the U. S. National Museum during the month of June 1961. They do not necessarily represent interceptions taken during the month, but do include any of special interest from recent months that were not previously reported.

ASIATIC RICE BORER (Chilo suppressalis (Walker)) in rice straw in baggage destined for Massachusetts at New York, New York, and in stores at San Diego, California.

A BOSTRICHID (Bostrichus capucinus (L.)) in licorice root cargo at Baltimore, Maryland.

A SUGAR-BEET CROWN BORER (Gnorimoschema ocellatella (Boyd)) in stores at Philadelphia, Pennsylvania.

WHITE GARDEN SNAIL (Theba pisana (Müller)) 2 times in cargo at Norfolk, Virginia.

A CHRYSOMELID (Phyllobrotica sp.) 2 times with lily bulb cargo destined for California at San Francisco, California.

A CHRYSOMELID (Lema melanopa L.) with plant in soil in baggage destined for Michigan at Detroit, Michigan; also twice with nursery stock for various destinations at Hoboken, New Jersey.

OLIVE FRUIT FLY (Dacus oleae (Gmelin)) in mail at Honolulu, Hawaii, and in baggage for New York at New York, New York.

KHAPRA BEETLE (Trogoderma granarium Everts) 13 times; in stores at Port Arthur, Texas, one time; at Jacksonville, Florida, one time in stores; at Houston, Texas, 9 times (including 7 in used bagging cargo for Texas and 2 in stores); at Boston, Massachusetts, one time in stores; and at Charleston, South Carolina, one time in stores.

A CERAMBYCID (Callidium rufipenne Motsch.) (species of some significance in Japan) 3 times; at Hoboken, New Jersey, one time in cargo of Paeonia for New Jersey; at Buffalo, New York, one time in mail for Long Island; and at Miami, Florida, one time in dunnage wood.

A SAWFLY (Arge similis (Voll.)) (an economic species in Japan) in mail shipments of Rhododendron cuttings destined for Glenn Dale, Maryland, at District of Columbia Inspection House.

A SPIDER MITE (Tetranychus viennensis Zacher) in baggage for Washington at Seattle, Washington.

A MITE (Bryobia chari P. & K.) in baggage destined for California at Honolulu, Hawaii.

GOLDEN NEMATODE (Heterodera rostochiensis Wall.) in soil with plants destined for California at San Pedro, California.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

FLEA BEETLES (Chaetocnema spp.)

Economic Importance: Although the genus Chaetocnema is well represented in the United States, several additional species have been recorded as important pests in various parts of Europe, Asia and North Africa. The four species and

one subspecies that are more frequently mentioned in the literature are C. concinna (Marsh.), C. tibialis tibialis (Ill.), C. tibialis breviscula (Fald.), C. aridula (Gyll.) and C. hortensis (Geoffr.). The first three have been recorded as serious pests of sugar beets while the latter two are injurious to cereal crops and various grasses. Of the two that attack cereal crops, C. hortensis appears to be more widespread, but C. aridula is probably the more important since it attacks both oats and barley while the former lives chiefly on barley. Wheat is rarely attacked by either species. All of the species and subspecies that attack sugar beets are considered important in areas where they occur. C. t. tibialis is very injurious in southern France where it is abundant and C. t. breviscula has been reported as the most important pest of sugar beets in the USSR. C. concinna replaces C. t. tibialis in northern Europe and, in addition to sugar beets, is a serious pest of several other crops which include rhubarb, buckwheat and mangold.

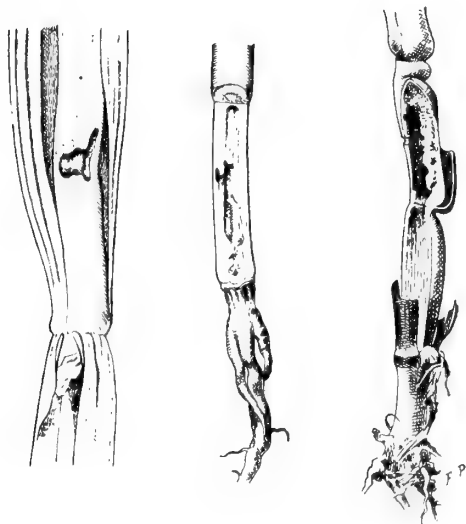


Figure I. Chaetocnema aridula larval damage to stalks of oats

Damage to grain crops is caused primarily by the larvae. Growth of infested plants is slow; the central leaf becomes yellowish and sometimes the terminal buds

die. Excessive tillering of infested plants occurs and yields are often-times considerably reduced. Damage is most frequently noted on the margins of fields. Damage to sugar beets is caused primarily by the adults; however, larvae of C. t. breviscula have been recorded as feeding on beet roots while larvae of C. tibialis and C. concinna develop in roots of Chenopodiaceae and Polygonaceae, respectively. Adult feeding on young sugar beets can be severe, sometimes destroying the crop.

Distribution: C. aridula and C. hortensis occur throughout all of Europe and east to Asia; C. hortensis also occurs in North Africa. C. concinna occurs throughout most of Europe and east into Siberia, but is largely replaced by C. t. tibialis in the southern areas of western Europe. C. tibialis is found in all of Mediterranean Europe, Turkey, Iraq, United Arab Republic (Egypt), southern USSR (including Turkestan) and the Ryukyu Islands (Asia) (the subspecies C. t. tibialis occurs in the west and C. t. breviscula in the eastern part of the species distribution).

Hosts: C. aridula and C. hortensis have been recorded on a number of grasses and small grains including oats, barley, wheat and rye; however, oats and barley appear to be the most important. Adults of C. concinna, C. t. tibialis and C. t. breviscula may be found feeding on a number of hosts, but the most economic damage occurs to sugar beets. Adults of C. concinna have also been recorded damaging buckwheat, strawberry, kale, hops, rhubarb, hemp, dullseed cornbind,

lambsquarter goosefoot, Rumex spp., mangold and a number of other plants; and C. t. tibialis adults have also been recorded on barley, mustard, soybean, rippleseed plantain and all plants of the Salsolaceae.

Life History and Habits: The biology of C. aridula and C. hortensis is quite similar. Adults appear during May in France. Eggs are deposited toward the base of young grain or grass plants, sometimes in the axils of leaves or on the tips of leaves. Hatching occurs in a few days and young larvae penetrate into the internode of the stem. It first excavates a fine gallery which is perceptibly horizontal, then ascends irregularly without going beyond the node situated just above. As many as 3 larvae have been found in the same internode. The plant, hindered in development, sometimes appears sinuous and folded. Larvae mature in about 3 weeks and leave the plants through very conspicuous, little round holes at the ground level. Pupation takes place in the soil 6-8 days later and adult emergence occurs in 18-21 days. Adult feeding takes place on wild grasses and hibernation occurs at the base of grass tufts. Mating and oviposition occur the following spring. Only one generation a year has been recorded.

C. t. tibialis appears as early as April in France. They begin feeding on leaves of saltbush, Russianthistle and beets, riddling them with holes which encroach on the parenchyma but do not go through it. Copulation occurs around the first of May and oviposition begins almost immediately. Eggs are laid on the ground. Larvae hatch and feed on roots of host plants. Apparently 2 or more generations occur each year in France. Adults of the last, and even the preceding generations, overwinter.

Overwintered adults of C. concinna appear as early as the last of April and immediately attack leaves of Polygonum. Copulation and oviposition occur during the warm hours of the first fine days. Isolated eggs are deposited in the ground at the base of host plants. Incubation takes 15-30 days, after which young larvae hatch and excavate fine superficial galleries in the roots of Polygonum. Larvae mature in about 28 days and leave plants to pupate in the soil. New adults emerge in about 30 days and seek hibernation quarters.

The life cycle of C. t. breviscula is similar to that of C. concinna and C. t. tibialis with the exception that larvae feed on the roots of sugar beets.

Descriptions: The species of Chaetocnema that attack grain crops, C. aridula and C. hortensis, are similar in appearance as are the species and subspecies that attack sugar beets, C. concinna, C. t. tibialis and C. t. breviscula. Detailed illustrations of C. aridula and C. concinna can be found on pages 881 and 882. Adult descriptions follow.

C. aridula and C. hortensis ADULTS - Length 2.5 mm.; moderately shining metallic greenish to bronze piceous; head wide; frons without longitudinal oval relief between points of insertion of antennae that is found in C. concinna. Punctuation of head rather fine, more marked at inner margin of eyes. Supraantennal plates inconspicuous (see fig. II). Antennae 11-segmented; first 5 more or less tinted with yellowish. Pronotum uniformly punctate; narrow flange on base and sides. Metasternum regularly punctate both on its disc and on its sides (see fig. II). Scutellum smooth; elytra dark, dullish bronze with irregular punctures, sometimes more or less lined up in form of striae. Legs yellowish or brownish, with exception of femora which are greenish black. Four hind tibiae show externally, at the level of their terminal third, a large tooth underlined by a fringe of hairs, which represents the extremity of the very strongly lengthened tarsal basket. Tarsi 4-segmented; third widened and grooved (notched). First segment of four front tarsi in males very conspicuously dilated and as long as other 3; posterior femora strongly swollen.

Adults of C. aridula and C. hortensis can be separated by the following:

1. Top of head and surface of pronotum more finely punctate than the frons and the face. Elytra punctate at random, except sometimes behind and on the sides. Segments of the base of the antennae spotted with brown above, at least the first. Front femora of a metallic greenish black. General form rather elongated.-----C. aridula.
2. Top of head and surface of pronotum strongly and densely punctate with punctures as strong as those of the frons and of the face. Elytra showing twin punctures in pairs and forming rather conspicuous striae behind and on the sides. Segments of the base of the antennae of a uniform yellow, without a spot. Front femora of a brownish black.-----C. hortensis.

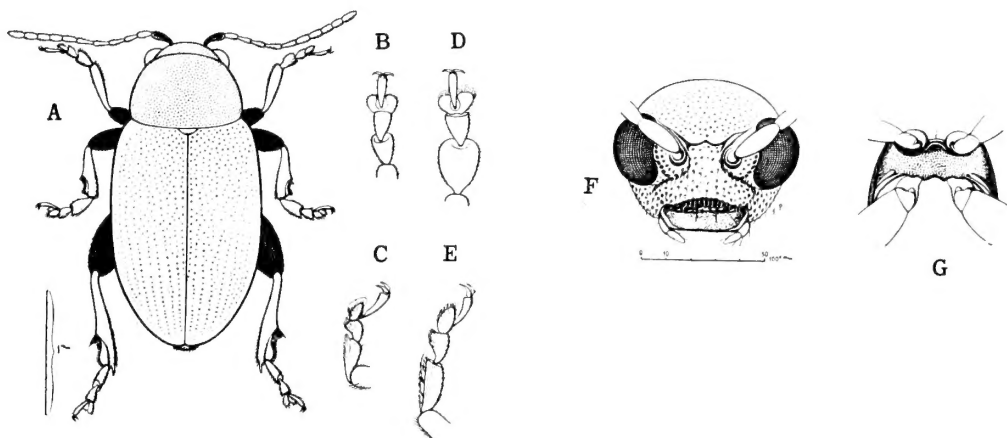


Figure II. Illustrations of Chaetocnema aridula (Gyll.) : A - Adult seen from above. B - Front tarsus of female; C - same in profile. D - Front tarsus of male; E - same in profile. F - Head seen from above. G - Underpart of metasternum showing punctation.

C. t. tibialis and C. concinna ADULTS - Small, 1.5 mm. long, relatively wide and rather strongly arcuate above. General color rather dull metallic green with more or less coppery reflection on head and prothorax. Antennae black, except for first 5 segments which are testaceous. Legs colored as follows: All femora black; tibiae and tarsi testaceous. C. t. tibialis head shows, between the antennae, a longitudinal oval elevation laterally edged by a row of punctures (or dots) which is prolonged and curved in along the cheeks. (see fig. III). Pronotum rather arcuate, densely and distinctly punctate; behind its anterior angles is found a well-marked callus; its sides distinctly flanged, but its posterior margin is not. This is the essential character permitting separation of C. t. tibialis from C. concinna. C. concinna shows a pronotum that is finely flanged behind all along its base; elytra with well-marked punctate striae; interstriae dull, finely punctate and reticulate. Males of both C. t. tibialis and C. concinna show greatly dilated first tarsal segments which are 2 times wider than the following ones.

C. t. breviscula ADULT - It differs from C. concinna in that there are no oblique depressions on the pronotum and no punctures near the base of the elytra. It differs from C. t. tibialis by the considerably smaller number of punctures on the frons between the eyes. Interspaces between punctate striae on elytra of C. t. breviscula have small punctures, without transverse rugae; base of antennae, tibiae and tarsi testaceous, lightly reddish; length 1.5-2.2 mm. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 11(37) 9-15-61.

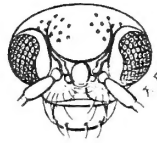


Figure III - Chaetocnema t. tibialis (Ill.) head, front view.

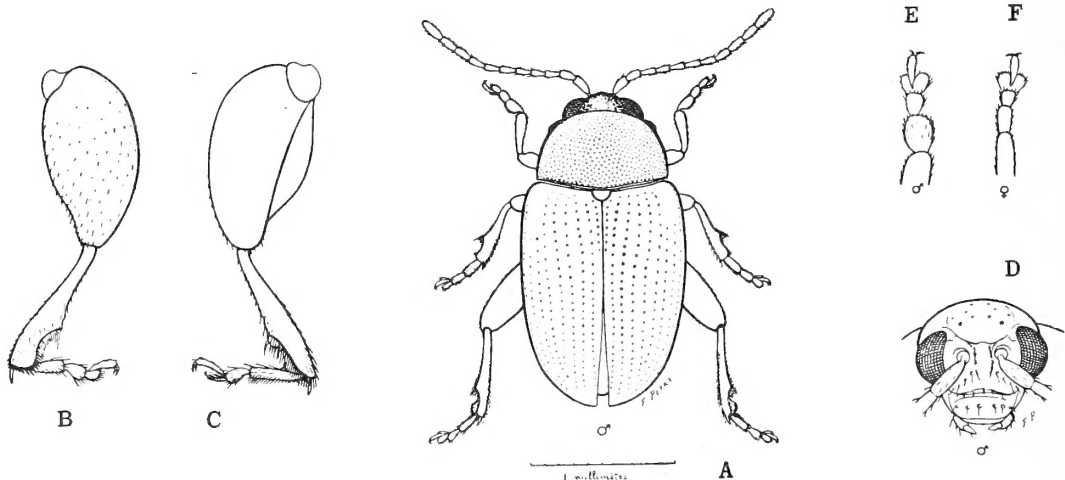


Figure IV - Illustrations of Chaetocnema concinna (Marsh)
A - Adult, dorsal view. B - Hind leg, dorsal view; C - same, ventral view. D - Head, front view. E - Front tarsus of male; F - same of female.

Major references: 1. Balachowsky, A. and Mesnil, L. 1935, 1936. Les Insectes Nuisibles aux Plantes Cultivees. Vol. 1 and 2, 1921 pp., Paris. (Figures of adults and damage). 2. Shchegolev, V. N. 1955. Agricultural Entomology. 616 pp., Moscow. [In Rus., p. 375]. 3. Heikertinger, F. and Csiki, E. 1940. Coleopterorum Catalogus [W. Junk]. Pt. 169. Chrysomelidae, Halticini. pp. 385, 387, Gravenhage, Netherlands.

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